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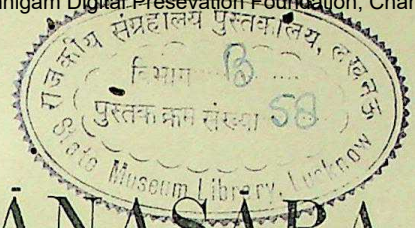

MĀNASĀRA

ON

ARCHITECTURE AND SCULPTURE

SANSKRIT TEXT WITH CRITICAL NOTES

EDITED BY

PRASANNA KUMAR ACHARYA, I.E.S.

M.A. (CALCUTTA), PH.D. (LEYDEN), D.LIT. (LONDON)

Dean of the Faculty of Arts, Head
of the Oriental Departments, Professor
of Sanskrit, University of Allahabad

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PREFACE

History of Publication

In 1834, in his Essay on the Architecture of the Hindus, Rām Rāz referred to the contents of the first few chapters of the *Mānasāra* from a fragmentary manuscript he had access to. Since then more manuscripts have been discovered, catalogued, and brought to the notice of the public. But the Sanskrit scholars like Dr. G. Bühler and Sir R. G. Bhandarkar have authentically branded this class of literature as written in "most barbarous Sanskrit."[1] Besides, the technical terms and obsolete expressions of the *Śilpa-śāstra*, practically a lost science, have had no place in any of the existing dictionaries. The texts contain no drawings, diagrams, or sketches. The then buildings, religious, military, especially residential, have mostly been destroyed, partly by time and partly by foreign invaders. Obviously these difficulties stood in the way of the elderly scholars and nobody had made any attempt to deal with this huge text for over 80 years, when, being induced by youthful enthusiasm, the present writer undertook in 1914 the task of giving "rebirth" to this "monumental work."

The unsatisfactory condition, both original and accidental, of the existing manuscripts of the *śilpa-śāstra* generally, and of the *Mānasāra* in particular, aggravated the expedition into this unexplored field of Sanskrit learning. The unknown ways have had to be discovered at great pains and many new things had to be learnt after bitter experience and elaborate experiments. The vast store of literature on the subject and the inscriptions and other archaeological records have had to be ransacked. Extensive tours in company with trained architects and engineers have had to be undertaken, involving great expenditure of time, money, and convenience from Landikotal on the borders of Afghanistan to Rameswaram in the south, from

[1] *Ep. Ind.*, Vol. 1, page 377 ; *Ind. Ant.*, Vol. XII, page 140.

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Mahenjadaro in Sindh to Shillong in Assam, in order to examine ancient monuments throughout the country, including the cave temples of Western and Central India, the monuments of the Indian States in Rajputana and in Hyderabad, the hill temples of Kedarnath, Badrinath, Tunganath, etc. An encyclopædic dictionary has had to be compiled wherein for the first time an attempt has been made to settle the meanings of, and explain in English, some three thousand technical terms by illustrative quotations from cognate literature. In addition, some two hundred measured drawings, diagrams, and sketches in line and in colours have had to be prepared at great trouble and expense. Thus the peculiar pain of giving "rebirth" to a once fully grown "barbarous" child of unknown origin has been brought home to the writer. The youthful enthusiasm has been put to a great trial through the continuous struggle for seventeen years. With great diffidence, therefore, this curious child is presented to the learned world. If received with sympathy and kindness even such a child may thrive and bring some solace to everybody responsible for and interested in it. Ultimately it may confer a lasting benefit on the country and the nation, because our architectural policy of the past few hundred years, based as it has been on foreign imitation, and in an entirely different climate and soil, has not proved quite successful in regard to temples and humble dwelling-houses, if not in regard to public edifices also.

Lord Pentland, the then Governor of Madras and in charge of the Education Department, was induced by Sir John Marshall, lately the Director-General of Archaeology in India, to take an interest in the *Mānasāra*, and some preliminary arrangements were made for its publication from Madras. But the unfortunate coincidence of His Excellency's retirement and Sir John's absence from India at the time of my arrival in Madras, forced me to leave the Presidency for Simla, where all the endeavours and the sympathy of Sir (then Mr.) George Anderson, Dr. D. B. Spooner, Sir Henry Sharp and Sir C. Ṣankaran Nair failed to secure a situation suitable for the "rebirth" of the *Mānasāra*. At last an opportunity arose when the work could be proceeded with in spite of other exacting duties. The Government of

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India recommended, and the Government of the United Provinces offered me a post in the Indian Educational Service at Muir Central College, Allahabad. Sir Claude F. de la Fosse, the then Director of Public Instruction and the first Vice-Chancellor of the reorganized Allahabad University, took up the matter with friendly sympathy and scholarly interest and induced the great educationist Governor, Sir Harcourt Butler, to sanction the publication on behalf of the Government of the United Provinces of Agra and Oudh through the Oxford University Press.

Description of the Manuscripts

The manuscripts which have been used in preparing the text of this First Edition of the *Mānasāra* are the following :—

(A) This belongs to the Library of the India Office (B.482). It is written in Devanāgarī script on modern paper $9\frac{3}{4}''$ by $7\frac{1}{2}''$. It contains 100 folios, each page of which has invariably 21 lines, except the last page which has only 1 line. Each line is half a *śloka*. The *ślokas* are inaccurately numbered from the beginning to the end. The writing seems to be by one and the same hand. The name of the writer is not known. The colophons are written in red ink. The manuscript gives up the *Mānasāra* at folio 78b. line 16, the middle of Chapter XVIII (Vimāna-lakshaṇa), without any colophon. The remaining 22 folios, apparently belonging to another work, are retained in Appendix क. This portion has two colophons—folio 93a, *iti Sūkshma-śāstre Kāma-koshṭa-paṭalaḥ* ; folio 95b, *iti Padma-saṁhitāyāṁ Raurava-bhede Kāma-koshṭa-lakshaṇa-vidhiḥ paṭalaḥ*. On page 101 it breaks off abruptly at the middle of line 1.

(B) This has been noticed by Aufrecht in the *Catalogues Catalogorum*, part III, page 97. It belongs to the Oriental Library of the Asiatic Society of Bengal. It is written on paper $12''$ by $8\frac{1}{2}''$. The first part, to folio 88, is a

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different work called *Nara-pati-vijaya*. The second part, called *Mānasāra-vāstu* and also *Kumāra-vāstu*, contains 163 folios, each page of which has 16 to 24 lines. Each line contains about three-quarters of a *śloka*. The *ślokas* are not numbered; but on the last page the total is given as 5,760 and this figure is not, of course, verified by actual counting. This has been undoubtedly written by more than one hand. But it is recorded on the last page that this work has been written by one Rāmānuj chārya for the *Kumpāni bāhādur* (the East India Company) in the *Śālivāhana Śaka* era 1677. The date of its being recorded is given in English, 14th April, 1823. The last page contains the mark of a seal in three different scripts—Urdu, Nāgarī, and Bengali. It begins with Chapter XV (*Pāda* or *Stambha*), and folio 108b has the colophon of the last chapter. The remaining folios 108 to 163 contain the first fourteen chapters.

(C) This belongs to the Library of the India Office (E. 3141, 3014) and has been noticed by C. P. Brown in *Eggeling's Catalogue*, page 1131. Dr. Goldstücker refers to it in his *Dictionary*, page 284. It is written in Devanāgarī character on paper 11″ by 7″. It contains 472 folios, one page of which is left blank. Each page has 16 to 18 lines, each of which is a half *śloka*. *Ślokas* are numbered up to folio 100. The colophons are not numbered in the latter part. Most of the chapters are incomplete and described in two places. The first sixteen chapters are altogether lost. The first few pages are quite fragmentary. The fly-leaf contains the following: "This portion of the शिल्पशास्त्र was copied from a very ancient manuscript in the old Tamil character, discovered at Trichinopoly. It was imperfect both at the beginning and at the end. It was written out under the direction of Charles Philip Brown, 1830." But "from various

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indications it would, however, rather seem that the volume was copied from two different manuscripts, one a Grantha and the other a Telegu manuscript (Grantha manuscript, no. 1987, and Telegu manuscript no. 525 in Taylor's *Catalogue* Rais., I 71 ; II 355)." It seems to have been copied from different sources by different writers, but evidently not from the sources mentioned here.

(D) This belongs to the Library of the India Office (*Mackenzie Collection*, no. III, 187). It is written in Telegu character on palm leaf, 13″ by 2″. It contains 162 folios, each page of which has 9 to 11 lines. Exactly like 'B,' it begins with Chapter XV and after the colophon of the last chapter of the book takes up the first fourteen chapters. The name of the copyist is not known. The date is given as Śaka 1656 (A.D. 1734). The characters are very small and indistinct. After careful collation with 'B,' it seems that both 'B' and 'D' are copies of the same original. 'B' may have been already copied from 'D' when the latter was removed to the India Office.

(E) This belongs to the Library of the India Office (*Mackenzie Collection*, no. III, 190). It is written in Telegu character on palm leaf, 19″ by 1¾″. It contains 68 folios, each page of which has 7 to 8 lines. But there are some pages quite blank. Each verse is followed by its Telegu translation. The pages are numbered 131-198. It begins at page 131. The colophon reads *iti Maya-mate Vāstu-śāstre Vimāna-lakshaṇa* (158, 6, 6). As Dr. Rost remarks, "the Sanskrit text is hopelessly corrupt."

(F) This belongs to the Tanjore Palace Estate. It is referred to in Aufrecht, part I, page 452, part III, page 97, and in Burnell, page 62, no. 11081. It is written in

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Grantha and Tamil characters on *Cadjan* (palm) leaf, 16½″ by 5″. The breadth of a single leaf is one inch. It contains 202 leaves, each of which has 4 to 5 lines. It can conveniently be divided into three parts. The first part, in Grantha character, is exactly the same as 'A,' showing their common origin. They are the same line for line; both break off the *Mānasāra* abruptly at the same line. The second part, in Tamil, called *Kāma-koshṭha-bandha*, corresponds to Appendix क and seems to be a commentary on the latter portion of the first part, which does not belong to the *Mānasāra*. The third part contains some chapters belonging to a different work, probably the *Mayamata*. Each verse is accompanied by a Tamil commentary throughout. This part is noticed in Appendix ख. 'F' like 'A' has, therefore, only the first seventeen chapters of the *Mānasāra* and a portion of Chapter XVIII.

(G) This belongs to the Tanjore Palace Estate. It is referred to in Aufrecht, part I, page 452, part III, page 97, and in Burnell, page 62, no. 11080. It is written in Grantha character on *Cadjan* (palm) leaf, 16″ by 2½″. The breadth of a single leaf is 1¼″. It contains 82 leaves, each page of which has 4 to 6 lines. The first two *ślokas* are invocations to the gods Gaṇeśa and Śiva. Then come 9 lines from Chapter XXXIV (Maṇḍapa). The manuscript begins practically with the next Chapter XXXV (Śālā) and runs to Chapter L (Bhūshaṇa).

(H) This belongs to the Deccan College, Poona, Bombay. It is referred to in Aufrecht, part III, page 97, and in Dr. Bhandarkar's Report for the years 1887-91. It is written in Devanāgarī character on foreign bluish paper, with water lines, 9½″ by 7⅜″. It contains 44 leaves, each page of which has 21 lines. Each line has about 21 letters. The characters are legible, clear and bold, and

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the writing is fairly correct. The manuscript is in the form of a modern book, with a margin of one inch to three-fourths of an inch with a double line of border in red ink on all sides. The same ink is used to denote the beginning and the end of the different Chapters, as also to show the beginning and the conclusion of the *anushṭubhs*, their *pādas*, and of sentences. No date is given. The author is not known. It begins with a table of contents. Like 'G,' it has only Chapters XXXV to L. The manuscript itself seems to be a modern copy of an older manuscript. The page '1*a*' has the words "*Mānava-Śilpa*" as the title of the work, though in Bhandarkar's report the name is given as "*Mānava-sāra-vāstu-śāstra.*"

(I) This belongs to the Government Oriental Library, Madras. It is referred to in Aufrecht, part II, page 104. It is written in cursive Grantha character on European paper and bound in size 13¼″ by 8″. It consists of 495 pages, each of which contains 18 lines. It retains all the chapters of the *Mānasāra* in their proper order with a few exceptions. The copyist gives his name as Lokanātha Śāstrī. The date of transcription is not given.

(J) This belongs to the Government of Madras. It is referred to in Aufrecht, part I, page 452, and in Taylor I, 71, no. 1987. It consists of 12 *Cadjan* (palm) leaves of the size 12¼″ by 1⅜″. Each page contains 8 lines. It is written in Grantha character. Neither the date of the manuscript nor the name of the copyist is given. Many leaves are missing and more are so injured that it is impossible to make out the contents. The last page contains in the middle the colophon of Chapter XLVII. The comparison has to be given up after a few lines of Chapter XLVI (Toraṇa).

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(K) These two manuscripts belong to the Palace Library of Trivandrum. They are referred to in Aufrecht part I, page 452, and described in Oppert II, 532, 6125, 6976. Of these, 532 and 6976 are not available and seem to have been lost. Of the two Trivandrum manuscripts, one is 6125 and the other is a new one, in the sense that it is not mentioned in any catalogue. Aufrecht thinks (page 452) that one of these three described by Oppert was "quoted by Rām Rāz." But there seems no reason for Aufrecht's supposition. From the description it seems on the contrary that Rām Rāz referred to the one called here 'J.'

Both of the Trivandrum manuscripts are written on palm-leaves in Malayalam character. One of them contains 63 *slokas* on 25 folios with 9 lines to a page of $7\frac{1}{2}''$ by $1\frac{1}{2}''$ and goes as far as the first 55 verses, with a Malayalam gloss. The other contains 6 folios of $7\frac{1}{2}''$ by $1\frac{1}{2}''$ with 9 lines to a page. This second one is the gloss and omits the verses 5, 9, 10, 14, 24, 28, 38, 40, 45, 48, 52 and 55. They deal with *Śaṅkhu-sthāpana* and the illustration of the *Āyādi-shaḍ-varga*; but comparison and collation are not possible. Apparently they are not copies of the *Mānasāra* and seem to belong to a different work. They are retained in Appendix ग.

Aufrecht, part III, page 97, refers to the *Reports on Sanskrit Manuscripts in Southern India* by E. Hultzch, vol. II, page 37, no. 1103. These manuscripts are the same as Burnell, Tanjore, page 62, nos. 11080 and 11081, and identical with 'F' (11081) and 'G' (11089).

Aufrecht, part III, page 97, refers to Hara Prasad, I and II, Calcutta, 1898, 8, II, no. 161. It is, perhaps, the same fragmentary manuscript, which now belongs to Mr. Nagendra Nath Basu, and appears to be a recent copy of one of the manuscripts described above.

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Of all these manuscripts, 'A' is the shortest. The characters are legible, clear and bold, but the language is very corrupt. The corruptions are not due only to the copyist, but are to be ascribed to the sources from which 'A' was copied. It does not differ materially from the first and second parts of 'F.' In fact 'A' and 'F' resemble each other so closely as to suggest a common origin, and may be taken to form one group.

'B' is the most incorrect manuscript; but, such as it is, it does not differ from 'D.' The various corruptions, except those which are obviously copyist's conjectures and *variae lectiones*, are the same. I am inclined to think that 'B' had already been copied from 'D' when the latter was removed to the India Office. At any rate their common origin is apparent. These two will thus form one group.

'C' is also interpolated and stands aloof, although it shows many striking coincidences with such parts of 'J' as do not agree with 'I.' Eggeling says (*Catalogue*, page 1154) "the volume ('C') was copied from two different manuscripts . . . this would account for certain repetitions, as well as for certain orthographic peculiarities (such as *yeka* for *eka*, *vuttara* for *uttara*), pointing to a Telegu source." That the original of 'C' was very damaged is clear from such marginal remarks of the copyist as "*Asmin sthale patrāṇi navāṇi nyūnāni*" (here are lost nine leaves).

'G' and 'H,' each of which has the same fifteen chapters only, are in a fairly good condition. They are copies from the same original, differing just enough to show that they have undergone the usual corruptions, which a long course of copying and re-copying under different circumstances renders unavoidable. They may, therefore, be classed under one group.

'I,' which is the *Codex Archetypus* of the present edition is the most perfect manuscript available of the *Mānasāra*. It is likely that 'I' was copied from 'J' when the latter was in its complete form. This would account for the displacement of some lines in

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the same chapter, as well as in different chapters, through copyist's blunders or want of revision. The lacuna of 'I' may thus be ascribed to negligence in reading the extremely injured parts of 'J,' since we have such obvious common mistakes as *varṇayet* for *van-nayat*, etc. They may be taken to form one group.

With regard to the provenance of the Manuscripts it is unfortunately impossible to give much definite information. 'A,' 'C,' 'D,' 'E,' belong to the India Office. 'B' comes from Calcutta and 'H' from Bombay. 'F,' 'G,' 'I,' 'J' come from Madras. The Telegu character of 'D' and the Grantha and Tamil characters of 'F' and the Grantha character of 'G,' 'I' and 'J' point to their South Indian origin. 'B' seems to have been written in Bengal and 'H' in Northern India. In spite of their Devanāgarī character, certain orthographic peculiarities, such as *yīśa* for *īśa* and *yeka* for *eka*, 'A,' 'C' seem to be copies of South Indian originals; or more probably, they were transcribed by South Indian copyists.

The critical apparatus furnishes abundant warrant for the division of the manuscripts into such groups, and it could easily be supplemented by a number of details, omission or addition, punctuation, particular forms of letters, etc., which are not of sufficiently noteworthy importance. Within each group the manuscripts are in close relationship. This is proved by a number of variants common to each group and especially by long lacunæ.

The relationship of the manuscripts within the above mentioned families ('A,' 'F'; 'B,' 'D'; 'C'; 'G,' 'H'; 'I,' 'J') is a matter of considerable difficulty. The nature of the work renders it probable that the relationship should vary in various particulars, and to some extent this expectation has been justified.

Of the peculiarities of the groups the following may be mentioned: 'A,' 'F' regularly write *Kamṭha, Kamdhara, Kampa-madhyena*; 'B,' 'D,' and 'I,' 'J,' write the same words as *Karṇa, Kamdhara, Kampamardhena*. 'B' and 'C' have sometimes *yeka* for *eka, yiśa* for *iśa*, etc. Such peculiarities as are common to almost all the manuscripts will be found treated more elaborately under the Critical Notes.

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General method followed in preparing the text

After the brief survey of the present condition of the manuscripts, it remains for me to indicate shortly the lines which I have followed in preparing the text of the first edition from the materials furnished by the codices.

The variations in the manuscripts consisting in spelling, words, phrases, sentences and grammatical concordance have been recorded. Errors in metre, when accidental or results of bad copying, can easily be corrected. But such errors in the *Mānasāra* are too numerous and they can hardly be corrected without tampering with the original. In all sacred works they have been respected by mediæval Indian scholars, and accounted for as peculiarities of holy sages (*ārsha*). The first editor of the *Mānasāra* has no other alternative than to take all these errors as *ārsha*.

I believe I have thus included in the Notes and Appendices more than what has any real bearing on the text. This principle is certainly not economical. But this is, under the circumstances to be noticed below, unavoidable and not altogether useless.

The chief object of critically editing the ancient manuscripts is to prepare an intelligible text. At the same time no one could deny the "mischief done by conjectural criticism of classical scholarship." But with a view to preparing an intelligible text of the *Mānasāra*, the ungrammatical or "barbarous" style of which will be found discussed elsewhere,[1] a certain amount of emendation is indispensable.

When the office of the Editor, Commentator, and Translator is all combined in one, the following principle, which, if not sound, is at least safe under the peculiar circumstances, has been followed in this edition :

"Let an editor give what there is, and let the commentator say what might be and what ought to be."

[1] Critical Notes, pp. 1-310; Appendix to *Indian Architecture*, pp. 199-214.

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This method has the merit of satisfying the two divergent schools of critics, namely, scholars who are in favour of an intelligent discrimination between what are different readings and what are mere blunders due to ignorance of authors or negligence of copyists, and those who insist upon a faithful reproduction of even the most obvious and unquestionable mistakes.

Working on this principle, such emendations as have been thought indispensable for the constitution of an intelligible text have been invariably marked as such both in the text, within brackets as is usually done in editing an ancient inscription, and also in the Notes, and the actual readings of all the manuscripts have been carefully recorded. But I have kept in view the risks with which any attempt at emendation is beset in the case of so difficult a text as the *Mānasāra* and have accordingly endeavoured to exercise the utmost caution. For the same reason, I have abstained from suggesting conjectural restorations for all the passages in which the text, as found in the *Codex Archetypus*, showed a lacuna, except where it could be restored from the nature of the context or by reference to related passages with a reasonable degree of certainty.

Under the circumstances pointed out in the description of the existing manuscripts, 'I' is the only possible basis of this edition. From this a departure has been made in favour of 'J' only where the reading of the latter appeared distinctly preferable and to represent a close approach to the original. In every such case the text of 'I' and all other manuscripts has been carefully indicated in the Notes. This has also been done in every instance where the text of 'I' had for the sake of elucidation to be corrected by any other manuscripts. Whenever the readings of 'I' seemed to be superior or equal to the variations of 'J,' and accordingly were retained in the text, the readings of 'J' have been recorded in the Notes. All words or letters, which 'J' or any other codex has supplied, where 'I' had a lacuna or otherwise, have been distinctly noted.

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The head lines for the pages and the chapters, as also the numbering of the *ślokas*, are not found in the manuscripts; the editor has taken the liberty of adding them.

As regards orthography, the rules laid down in the grammar of Pāṇini have, strictly speaking, no large application in an ungrammatical text like the *Mānasāra*. It is, however, desirable to follow one principle throughout and the following methods have been generally followed in this edition :

(1) *Anusvāra* has not been used in place of 'm' at the end of a sentence or verse, and before vowels.

(2) Nasals have not been replaced by *anusvāra* in the interior of simple words, e.g. अङ्गन पञ्च, अञ्जन, अन्त, स्तम्भ, etc.

(3) *Visarga* has been used instead of doubling of श, ष and स (चतुःशाला not चतुश्शाला, चतुःषड्भागं not चतुष्षड्भागं, अन्तःसालम् not अन्तस्सालम्.)

(4) The usual forms have been used in cases of confusion between kh and gh (e.g. parikhā not parighā), ṭ and ḍ (e.g. maṇḍapa not maṇṭapa), 'ṇ' and 'n', and 'ś' and 's.'

(5) The correct forms have also been used in cases like stāna for sthāna, etc.

(6) The rare use of double consonants for single, and *vice versa*, has been corrected.

(7) Of individual words like तृभाग for त्रिभाग, अलिन्द for अलिन्द, द्वार for द्वार, etc., the correct forms have been used.

(8) When there are two forms of some words differing only by व and व (e.g. विन्दु विन्दु, वध्या, वन्ध्या) or श and स (e.g. वसिष्ठ, वशिष्ठ), the one which agrees with the pronunciation current in Northern India has been retained.

(9) The correct form has been given when a short vowel is used for a long one and *vice versa* (e.g., 'a' for 'ā,' 'i' for 'ī,' 'u' for 'ū').

(10) The correct case terminations have been used when they are altogether omitted and are indicated within brackets.

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(11) In the instances of wrong cases, mostly the nominative and accusative have been corrected and marked within brackets, and the rest have been rarely corrected.

(12) In cases of wrong numbers, singular for plural or dual, and *vice versa*, and false genders, masculine words treated as if they were neuter or feminine, and *vice versa*, alterations can hardly be suggested without considerably handling the text. Wherever they are found indispensable, they are marked within brackets and noticed in the Notes.

(13) Masculine or neuter forms of accusatives and pronouns used with reference to feminine nouns have been similarly noticed.

(14) Similar alterations have been made of words in *sandhi* and compounds, where the elementary rules of grammar are violated in a large number of instances without following a discoverable fixed principle.

(15) Inappropriate or incorrect verbal derivatives have been, as a rule, treated in the same way, the alterations, whenever suggested, being marked within brackets. These matters are elaborately discussed and fully illustrated in the writer's *Indian Architecture* under "The Language of the *Śilpa-śāstra*" (pages 199-214).

Signs : ( ) indicates a correct form to replace an incorrect one which immediately precedes it ; [ ] indicates an emendation by an addition, omission, or alteration of letters or words.

I feel no hesitation in declaring that a perfect text of the *Mānasāra* written in a chaste language is unattainable. It is unlikely that there still exist manuscripts, which are hitherto undiscovered and which are not derived from any of our manuscripts. I am, therefore, of opinion that the *Mānasāra* was never written in a chaste language and that its imperfections are original.[1]

[1] A few critics questioned if Sanskrit (the refined) language of the *Śilpa-śāstra*, the science of *fine arts*, could ever have been 'barbarous'; one such critic is dead and gone, and if there be yet anybody left he will have now an opportunity of examining the text for himself and revising his notion (see Opinions and Reviews at the end of Vol. IV).

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P. K. ACHARYA.

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प्राच्यविभागाध्यक्षेण
संस्कृतप्रधानाध्यापकेन

श्रीप्रसन्नकुमाराचार्येण

प्राचीनहस्तलिखितपुस्तकेभ्य आधुनिकपाश्चात्त्यरीत्या संस्कृत्य सम्पादितम्

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विषयसूची

पृष्ठाङ्काः

प्रकाशनवृत्तम् (History of publication) .... ix—xi
प्राचीनहस्तलिखितपुस्तकानां विवरणम् (Description of MSS.) xi—xviii
सम्पादनरीतेर्व्याख्या (Method followed in preparing the text) xix—xxii
उपकारस्मरणम् (Acknowledgment) ....xxiii—xxiv
संस्कृतभूमिका .... क—छ

अध्यायाः

१ संग्रहः .... १—२
२ शिल्पिलक्षणपूर्वकं मानोपकरणविधानम् .... ३—५
३ वास्तुप्रकरणम् .... ६—७
४ भूमिसंग्रहविधानम् .... ८—९
५ भूपरीक्षाविधानम् .... १०—१३
६ शङ्कुस्थापनलक्षणम् .... १४—१८
७ पदविन्यासलक्षणम् .... १९—२८
८ बलिकर्मविधानम् .... २९—३१
९ ग्रामलक्षणम् .... ३२—५१
१० नगरविधानम् .... ५२—५६
११ भूमिलम्बविधानम्.... .... ५७—६२
१२ गर्भविन्यासविधानम् .... ६३—७१
१३ उपपीठविधानम् .... ७२—७७
१४ अधिष्ठानविधानम् .... ७८—९३
१५ स्तम्भलक्षणम् .... ९४—११०
१६ प्रस्तरविधानम् .... १११—११८
१७ सन्धिकर्मविधानम् .... ११९—१२६
१८ विमानलक्षणम् .... १२७—१४२
१९ एकतलविधानम् .... १४३—१५२
२० द्वितलविधानम् .... १५३—१५७
२१ त्रितलविधानम् .... १५८—१६०

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अध्यायाः		पृष्ठाङ्काः
२२	चतुस्तलविधानम्	१६१—१६४
२३	पञ्चतलविधानम्	१६५—१६६
२४	षट्तलविधानम्	१६७—१६८
२५	सप्ततलविधानम्	१६९—१७०
२६	अष्टतलविधानम्	१७१—१७३
२७	नवतलविधानम्	१७४—१७५
२८	दशतलविधानम्	१७६—१७७
२९	एकादशतलविधानम्	१७८—१७९
३०	द्वादशतलविधानम्	१८०—१८७
३१	प्राकारविधानम्	१८८—१९१
३२	परिवारविधानम्	१९२—१९८
३३	गोपुरविधानम्	१९९—२२०
३४	मण्डपविधानम्	२२१—२४१
३५	शालाविधानम्	२४२—२५६
३६	गृहमानस्थानविधानम्	२५७—२६०
३७	गृहप्रवेशविधानम्	२६१—२६४
३८	द्वारस्थानविधानम्	२६५—२६७
३९	द्वारमानविधानम्	२६८—२७३
४०	राजहर्म्यविधानम्	२७४—२७९
४१	राजाङ्गविधानम्	२८०—२८१
४२	राजलक्षणम्	२८२—२८५
४३	रथलक्षणम्	२८६—२९२
४४	शयनविधानम्	२९३—२९६
४५	सिंहासनलक्षणम्	२९७—३०४
४६	तोरणविधानम्	३०५—३०७
४७	मध्यरङ्गविधानम्	३०८—३०९
४८	कल्पवृक्षविधानम्	३१०—३१२
४९	मौलिलक्षणम्	३१३—३२१
५०	भूषणलक्षणम्	३२२—३३३
५१	त्रिमूर्तिलक्षणम्	३३४—३३७
५२	लिङ्गविधानम्	३३८—३५१
५३	पीठलक्षणम्	३५२—३५४

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अध्यायाः		पृष्ठाङ्काः
५४	शक्तिलक्षणम्	३५५—३६१
५५	जैनलक्षणम्	३६२—३६५
५६	बौद्धलक्षणम्	३६६
५७	मुनिलक्षणम्	३६७—३६९
५८	यक्षविद्याधरलक्षणम्	३७०
५९	भक्तलक्षणम्	३७१—३७४
६०	हंसलक्षणम्	३७५—३७६
६१	गरुडलक्षणम्	३७७—३८२
६२	वृषभलक्षणम्	३८३—३८५
६३	सिंहलक्षणम्	३८६—३८७
६४	प्रतिमाविधानम्	३८८—३९१
६५	उत्तमदशतालविधानम्	३९२—३९८
६६	मध्यमदशतालविधानम्	३९९—४०१
६७	प्रलम्बलक्षणम्	४०२—४०७
६८	मधूच्छिष्टविधानम्	४०८—४१०
६९	अङ्गदूषणविधानम्	४११—४१३
७०	नयनोन्मीलनलक्षणम्	४१४—४१८
परिशिष्टम्	....	४१९—४५१
अनुक्रमणिका	....	४५३—५१०
टीका (Critical notes)	....	१—३११

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भूमिका

अस्य खलु मानसारस्य ग्रन्थ-तामील-तैलङ्ग-मलयालं-नागरीतिपञ्चप्रकाराभिर्लिपिभिर्लिखितानि प्राचीनहस्तलिखितपुस्तकानि समालोच्य पाश्चात्त्याधुनिकसरणिमवलम्ब्य मया प्रथमसंस्करणं विहितम् । तथा च राजभाषायामनुवादोऽपि कृतः ।

संस्कृतभाषायामेव मानसारं लिखितमिति हि प्रसिद्धिः । परन्तु सा भाषा सर्वथैवासंस्कृता । बूलरादिपाश्चात्त्यपण्डितैस्तथा च भाण्डारकरादिभारतीयविद्वद्धुरन्धरैरेतद् बर्बरजनोचितसंस्कृतमिति वर्ज्जितम् ।(१) ।

मानसारमाधुनिकैर्दुर्बोध्यमनधिगम्यं चेत्यत्र कारणान्तरमपि वर्त्तते यतोऽदसीयसहस्रत्रयपरिमितपारिभाषिकशब्दानामर्था दृष्टचरसकलभाषाभिधानसाहाय्येनाप्यधिगन्तुं न शक्यन्ते । अतो मया सहस्रपृष्ठात्मकं भारतीयशिल्पशास्त्रविषयकमेकमभिधानं सम्पादितम् । तच्चाधुना प्रकाशितमेव । तत्र तु सर्वेभ्य एव वास्तुशास्त्रेभ्यः सर्वेभ्यश्च शिलालेखेभ्यस्तथा वेदब्राह्मणोपनिषद्भ्यः पुराणागमरामायणमहाभारतेभ्यः काव्यनाटकेतिहासेभ्यो नीतिज्योतिषशास्त्रेभ्यश्च संगृहीतानां चतुःसहस्राधिकशिल्पीयशब्दानां प्रयोगं सोदाहरणं प्रदर्श्य तदर्थानां स्थिरीकरणे यत्नमकार्षम् । एतदभिधानसाहाय्येनैव मानसारस्यार्थोपलब्धिश्चानुवादश्च सम्भाव्येते स्म ।

मानसारे प्रस्तुतानां विषयाणां संक्षेपेण विवेचनमधुना कर्त्तव्यम् । मानसारं खलु गृहादिनिर्म्माणविषयकवास्तुशास्त्रान्तर्गतम् । वास्तुशास्त्रं तु शिल्पशास्त्रान्तर्भूतम् । शिल्पानां बहवो भेदाः सन्ति । तथा च वात्स्यायनीयकामशास्त्रे चतुःषष्टिकलात्मकानि शिल्पानि

(१) एपिग्राफिआ इण्डिका, प्रथमखण्डम्, पृ० ३७७ ।

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स्वीकृतानि (१)। तथैव श्रीमद्भागवतटीकाकृता श्रीधरेणाथ जीवगोस्वामिना चाप्येवं विवृतम् (२)। विष्णुपुराणे तथा हरिवंशे (३), बौद्धानां ललितविस्तरे (४), जैनानामुत्तराध्ययनसूत्रे (५), तथा च कल्पसूत्रे (२११), दशकुमारचरिते (२, २१), कादम्बर्याम् (पृ० ७०), क्षेमेन्द्रस्य कलाविलासे, समवायसूत्रे, विदर्भराजस्य रामचन्द्रकृतटीकायाम्, ललितासहस्रनाम्नो नारायणकृतटीकायाम् (६) तथा च भास्करराजटीकायाम् (पृ० ७१) शिल्पानां सुदीर्घा नामावली (७) द्रष्टव्या।

अत्र खलु मानसारे प्रस्तुता विषयाः सप्ततिसंख्याकैः प्रकरणैर्विभक्ताः। तत्र प्रथमेऽनुक्रमणिका। ततः क्रमेण शिल्पिलक्षणपूर्वकं मानोपकरणं, वास्तुप्रकरणं, भूपरीक्षाविधिः, भूसंग्रहः, गृहादीनां दिङ्निर्णयार्थं शङ्कुस्थापनलक्षणं, संगृहीतभूमिषु पदविन्यासः, बलिकर्मविधिश्चेति विषया अष्टस्वध्यायेष्ववतरणिकारूपेण वर्णिताः। अथ सर्वप्रकाराणां ग्रामाणां नगरदुर्गाणां च स्थापनं बाहुल्येन विशदीकृतम्। तत एकादिद्वादशान्ततलयुक्तानां प्रासादानां

(१) १–गीतम्, २–वाद्यम्, ३–नृत्यम्, ४–आलेख्यम्, ५–विशेषकच्छेद्यम्, ६–तण्डुलकुसुमबलिविकाराः, ७–पुष्पास्तरणम्, ८–दशनवसनाङ्गरागः, ९–मणिभूमिकाकर्म, १०–शयनरचनम्, ११–उदकवाद्यम्, १२–उदकाघातः, १३–चित्रयोगाः, १४–माल्यग्रथनविकल्पाः, १५–शेखरकापीडयोजनम्, १६–नेपथ्यप्रयोगाः, १७–कर्णपत्रभङ्गाः, १८–गन्धयुक्तिः, १९–भूषणयोजनम्, २०–ऐन्द्रजालयोगाः, २१–कौचुमारयोगाः, २२–हस्तलाघवम्, २३–विचित्रशाकयूषभक्ष्यविकारक्रियापानकरसरागासवयोजनम्, २४–सूचीवानकर्माणि, २५–सूत्रक्रीडा, २६–वीणाडमरुकवाद्यानि, २७–प्रहेलिका, २८–प्रतिमाला, २९–दुर्वाचकयोगाः, ३०–पुस्तकवाचनम्, ३१–नाटकाख्यायिकादर्शनम्, ३२–काव्यसमस्यापूरणम्, ३३–पट्टिकावेत्रवानविकल्पाः, ३४ तर्ककर्माणि, ३५—तक्षणम्, ३६—वास्तुविद्या ३७—रूप्यरत्नपरीक्षा, ३८—धातुवादः, ३९—मणिरागाकरज्ञानम्, ४०—वृक्षायुर्वेदयोगाः, ४१—मेषकुक्कुटलावकयुद्धविधिः, ४२—शुकसारिकाप्रलापनम्, ४३–उत्सादन-संवाहन-केशमर्दन-कौशलम्, ४४–अक्षरमुष्टिकाकथनम्, ४५–म्लेच्छितविकल्पाः, ४६–देशभाषाविज्ञानम् ४७–पुष्पशकटिका, ४८–निमित्तज्ञानम्, ४९–यन्त्रमातृका, ५०–धारणमातृका, ५१–संपाठ्यम् ५२–मानसी, ५३–काव्यक्रिया, ५४–अभिधानकोषः, ५५–छन्दोज्ञानम्, ५६–क्रियाकल्पः, ५७–छलितकयोगाः, ५८–वस्त्रगोपनानि ५९–द्यूतविशेषाः, ६०–आकर्षक्रीडा, ६१–बालक्रीडनकानि, ६२–वैनयिकीनां विद्यानां ज्ञानम्, ६३–वैजयिकीनां विद्यानां ज्ञानम्, ६४–व्यायामिकीनां विद्यानां ज्ञानम्—चेति। (मुम्बईसंस्करणम्—पृ० ३२—३४, ४३, ९५)

(२) स्कन्ध १०, अध्याय ४५, श्लोक ३६।

(३) मदीयाभिधानम्, पृ० ७३६।

(४) राजेन्द्रलालमित्रस्य संस्करणम् पृ० १७८, १७९, ४१७।

(५) सेक्रेड बुक्स आव् दी ईस्ट सीरीज़, खण्ड ४५, पृ० १०८।

(६) जर्नल आव् द रायल एशियाटिक सोसायिटी, १९१४, पृ० ३५५, ३६७।

(७) वेङ्कटसुबियारस्य कलानामकप्रबन्धः, पृ० ३५, ३२।

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भूमिलम्बविधान वर्णितम् । प्रसङ्गक्रमेण कतिसंख्यकतलेषु गृहेषु के के वसन्तीत्येतदपि निर्धारितम् । अनन्तरं सर्वप्रकाराणां वास्तूनां गर्भन्यासविधिः, उपपीठलक्षणम्, अधिष्ठानविधिः, स्तम्भलक्षणम्, प्रस्तरविधिः, सन्धिकर्म च विस्तरेण वर्णितानि । ततो विमानलक्षणाभिधेऽध्याये सर्वप्रकाराणां गृहाणां कतिचित् साधारणविवरणानि कृतानि । ततो द्वादशसु प्रकरणेष्वेकादिद्वादशान्ततलानि विस्तरेण प्रतिपादितानि । ततः प्राकारनामकवास्तुविशेषस्य विस्तृतं विवरणम् । परिवारकाख्येऽध्याये मन्दिरस्य प्राङ्गणे कुत्र केषां परिवारदेवानां गृहाणि भवेयुरित्यालोचितम् । ततः षोडशतलान्तानां गोपुराभिधानानां देवमानवसदैनवहिर्द्वारगृहाणां विशद विवरणं कृतम् । तत एकस्मिन् सुदीर्घप्रकरणे मण्डपानाम्, अन्यस्मिंश्च शालानां वर्णनमस्ति । ततो गृहविन्यासो गृहप्रवेशश्चेति द्वे प्रकरणे । एवं क्रमेण सर्वप्रकाराणां हर्म्याणां द्वारमानं द्वारस्थानं चाध्यायद्वये वर्णितम् । तदनु राजहर्म्यवर्णनानन्तरं राज्याङ्गस्य भूपतीनां च लक्षणानि कृतानि । ततो यानरथादिलक्षणम् । अथ क्रमेण शयनं सिंहासनं तोरणं चाध्यायत्रये विवृतानि । प्राङ्गणस्थमध्यरङ्गनामकस्य वास्तुविशेषस्य वर्णनं तथा तोरणासनमण्डपप्राङ्गणादीनां भूषणार्थं कल्पवृक्षलक्षणमध्यायद्वये ततो लभ्यम् । ऊनपञ्चाशत्तमे प्रकरणे नानाविधराजमुकुटराजाभिषेकवर्णनं कृत्वा सर्वप्रकाराणां गृहाभरणानां तथाऽङ्गाभरणानां च वर्णनं भूषणनामके पञ्चाशत्तमेऽध्याये कृतम् ।

ततो विंशतावध्यायेषु भास्करीयाणां वर्णनम् । तत्रैकपञ्चाशत्तमेऽध्याये ब्रह्मादित्रिमूर्त्तिलक्षणम् । शिवलिङ्गस्य तत्पीठस्य च लक्षणमध्यायद्वये विस्तृतम् । शक्तिनामकेऽध्याये स्त्रीमूर्त्तीनां भेदा लक्षणानि च वर्णितानि । बौद्धदेवानां जैनदेवानां च मूर्त्तिवर्णनं ततः परं दृश्यते । अनन्तरं मुनिलक्षणं यक्षविद्याधरादिलक्षणं च । ततो भक्तलक्षणाह्वेऽध्याये सालोक्यसामीप्यसारूप्यसायुज्यभेदभिन्नानां महापुरुषाणां मूर्त्तिलक्षणं विशदीकृतम् ।

ततो देववाहनानां मूर्त्तिलक्षणम्—तत्राध्यायचतुष्टये हंस-गरुड-वृषभ-सिंहलक्षणानि क्रमेणालोचितानि । परवर्त्तिन्यध्याये प्रतिमाविधानाख्ये सर्वविधप्रतिमानां किञ्चित्साधारणं विवरणं प्रदत्तम् ।

अतःपरं तालमानं विशदीकृतम् । तालमानं तु मूर्त्तीनां पादादिमस्तकान्ताङ्गप्रत्यङ्गानामापेक्षिकं षड्विधं मानादिकम् । तथा हि—मानं प्रमाणं परिमाणं लम्बमानमुन्मानमुप्मानं चेति । अत्र मानसारे तालमानस्य दश एव भेदाः । परन्तु बिम्बमाने द्वादश भेदाः स्वीकृताः । काश्यपीये अंशुमद्भेदे बृहत्संहितायां ब्रह्माण्डपुराणे मत्स्यपुराणे शिल्परत्ने सुप्रभेदागमे

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कारणागमे वैखानसागमे कामिकागमे चेदं तालमानं समुपवर्णितम् (१)। मानसारस्य पञ्चषष्टितमषट्षष्टितमाध्याययोरुत्तमदशताललक्षणमध्यमदशताललक्षणे यथाक्रमं विशेषेणोदाहृते। ततः प्रलम्बलक्षणाभिधेऽध्याये समभङ्ग आभङ्गोऽतिभङ्गस्त्रिभङ्गश्चेति भङ्गस्थानां मूर्त्तीनां कतिभिः शिरसः पार्श्वादिभ्यश्च निर्गताभिः काल्पनिकीभी रेखाभिर्मानादिकं निर्द्धारितम्। ततो मधूच्छिष्टनाम्न्यध्याये मूर्त्तीनां स्वर्णरजतादिनिर्मितानां मधूच्छिष्टादिना शोधनं वर्णितम्। ततो मूर्त्तीनां तथा च गृहादीनां निर्माणदोषपरिहारार्थोऽङ्गदूषणविधाननामकोऽध्यायः। अन्तिमे सप्ततितमे नयनोन्मीलनाध्याये मूर्त्तीनां निर्माणशेषचक्षुरुन्मीलनं वर्णितम्।

अस्य मानसारस्य सप्ततिसंख्यकेष्वध्यायेषु प्रथमाष्टकं प्राथमिकं प्रस्तावनामूलकमानुषङ्गिकविषयात्मकम्। अनन्तरेषु द्विचत्वारिंशत्संख्येष्वध्यायेषु सर्वविधानां वास्तुशिल्पानां तथा ग्रामाणां नगरदुर्गप्राकाराणां शालामण्डपगोपुराट्टालिकाराजहर्म्यादीनां तलस्तम्भपीठोपपीठाधिष्ठानाद्यङ्गप्रत्यङ्गानां सम्पूर्णं विवरणं वैज्ञानिकरीत्या विस्तरेण कृतम्। तत्र तु यानरथशय्यासनपेटिकादीपदण्डादिगृहोपकरणानां तथा च सर्वविधानां हारवलयकङ्कणकेयूरपादुकाशिरोभूषणानां च विस्तृतं विवरणमस्ति। विंशतावध्यायेष्वन्तिमेषु भास्करीयशिल्पानां वर्णनं विद्यते। तत्र देवदेवीनां यक्षविद्याधरगन्धर्वकिन्नराणां स्त्रीपुरुषाणां तथा च मुनीनां महापुरुषाणां पशुपक्षिमत्स्यकीटादीनां च मूर्त्तीनामीदृशं सकलं विवरणमुपलभ्यते येनानायासेनैवाशिक्षितैरपि शिल्पिभिर्निर्दोषाः प्रतिमा निर्मातुं शक्याः।

अस्मादिदं तावदसंशयं ज्ञायते यदत्र मानसारे सर्वेषामेव स्थापत्यभास्करीयशिल्पानां विवरणं कृतमिति। शिल्पकोषनाम्नि प्रबन्धान्तरेऽस्मत्कृताभिधानस्य परिशिष्टे तथा चान्यत्रापि (२) वर्त्तमानानां मुद्रितामुद्रितानां सर्वशिल्पशास्त्राणां संक्षिप्तं विवरणं प्रदर्शितम्। तेषु शतद्वयमितेषु ग्रन्थेषु विवरणप्राचुर्यविषये वा प्रस्तुतविषयविन्यासविषये वोभयात्मके न कोपि मानसारसदृशः। ते तु प्रायेण सर्व एव मानसारमूलका इत्यस्माभिः स्वकृतभारतीयशिल्पशास्त्रे (३) प्रदर्शितम्।

(१) मानसारम्; अध्याय ६० पृ० ६–३५; ५७।१४–६४; ५९।६७—१००; ६५।२ १७९; ६६।२—७८। बिम्बमानम्, श्लो० १७ ७२; ९१—१३८। परिशिष्टम् १०। अंशुमद्भेदः—ग्लिङ् पृ० २५१। बृहत्संहिता—अ० ५८ श्लो० ४। ब्रह्माण्डपुराणम् खण्ड १, अनुषङ्गपाद अ० ७. श्लो० ९७। मत्स्यपुराणम्—अ० २५८. श्लो० १९। अवशिष्टानां प्रमाणानि मदीयभारतीयशिल्पशास्त्रे १२३ तमे पृष्ठे द्रष्टव्यानि।

(२) मदीयभारतीयशिल्पशास्त्रम् पृ० ८९—१०९।

(३) अध्यायः ३, पृ० ११० १३३।

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शिल्पशास्त्रेभ्योऽन्यत्रापि शिल्पानां किञ्चिद्विवेचनं दृश्यत एव । तथा ह्यृगथर्वादिवेदेषु ऐतरेयादिब्राह्मणेषु बौधायनापस्तम्बादीनां सूत्रेषु (१), नानाविधेषु बौद्धशास्त्रेषु (२), तथा मत्स्याग्निगरुडस्कन्दवायुभविष्यनारदीयादिषु पुराणेषु (३), बृहत्संहितायाम् (४) कौटिलीयेऽर्थशास्त्रे (५), शुक्राचार्यस्य नीतिशास्त्रे (६), सूर्यसिद्धान्त-सिद्धान्तशिरोमणि-लीलावती-प्रभृतिषु ज्योतिःशास्त्रेषु (७), विविधकाव्यनाटकेतिहासेषु (८), तथा यास्कीये निरुक्ते (९),

(१) ऋग्वेदः ३।५३।६ ; ४।४९।६ ; ८।१०।१ ; ७।८५।६ ; १।११२।७ ; २।४।५ ; ५।६२।६ ; ७।८८।५ ; अथर्ववेदः ७।८३।१ ; १०।६।४ ; ३।१२ ; ९।३ ; ९।३।४।५ तैत्तिरीयसंहिता—५।४।११ ऐतरेयब्राह्मणम्—८।२१ । सूत्राणां प्रमाणानि मदीयभारतीयशिल्पशास्त्रे सप्तमपृष्ठे द्रष्टव्यानि ।

(२) विमानवत्थु (टीका)—पृ० ८२ । दीघनिकाय—१९।३६ । जातक १।१९९ ; ६।२६९ । चुल्लवग्ग ६।१७।१ ; ४।८ ; ३।७।१० ; ४।१० ; ३।३ ; ३।५ ; १४ १ ; ४।१० ; ३।१० ; ३।८ ; २।२ ; ३।३ ; ३।८ ; ११।६ ; १३।२ ; १४।१ ; ८।१ ; २।४ ; २।९ ; ५।११।६ ; १०।३ । महासुदस्सनसुत्त १।६० ; १।५९। विनय—४।३०८ ; २।६७ ; ४।४७ इ० । महावग्ग—१।३०।४ ; ३।५।६ ; ३।५।९ ; १।२५।१८ ; ५।१०।९ ; ५।१०।२ ।

(३) मत्स्यपु०—अ० २५२, २५५, २५७, २५८, २५९ २६२, २६३, २६९, २७० । अग्निपु०—अ० १०६, ४२, १०४, ५१, ४९, ४३, ४४, ६२, ५० ५१, ५३, ५४, ५५ । गरुडपु०—अ० ४७ ४५, ४८ । स्कन्दपु०—माहेश्वरखण्ड, द्वितीय, अ० २५ । वैष्णवखण्ड, द्वितीय अ० २५ । माहेश्वरखण्ड प्रथम, अ० २४ । वायुपु०—खण्ड १, अ० ३९ । भविष्यपु०—मध्यपर्व, अ० १२ । ब्राह्मपर्व, अ० १३०, १३१, १३२ । नारदीयपु० खण्ड १, अ० १३ । लिङ्गपु०—खण्ड २, अ० ४६ ।

(४) बृहत्संहिता अ० ५३, ५६ ५७, ५८, ७९ ।

(५) कौ० अर्थशा०—प्रकरण २२, २३ २४, २५, ६५, ६६ ।

(६) शुक्रनीति० ४।४ ; ४।६ ।

(७) सूर्यसिद्धान्त ३।१।४ । सिद्धान्तशिरोमणिः—अन्तिमखण्ड अ० ७ श्लो० ३६ ४९ । लीलावती—खण्ड २, अंश ४, अ० २ । गर्गसंहिता—(हस्तलिखिता ट्रिनिटीकालेज-कैम्ब्रिज) पृ० ६७—६८ । लघुशिल्पज्योतिःसारः—श्लो० ३—५ ।

(८) मेघदूतम्—२।१ । विक्रमोर्वशीयम्—अङ्क ३ । उत्तररामचरितम्—अङ्क ३, चत्वारिंशत्पद्यस्योपरितनो गद्यसन्दर्भः । मृच्छकटिकम्—१।१७ ; २।८३ ; ४।१२९ ; ६ २०९ ; ६।२१२, ३९, ५२ ; ८।२८२ ३८३ ; ९।३४७ ३४९—३५१ ; २।८८, १३६, १०१ ११७, १०७—९ ; ६।२०४ २११ ; ५।१७७ ; ६।२१६ ; ९।२८९ २९१, ३०२, ३०५, ३०७, ३२० ६० । राजतरङ्गिणी—१।१०३, १७० ; ३।३८०, ३८१ ; ४।२००, २०४ ; १।९३, ९४, ९८, १४०—१४४, १४६, १४७ १६९, १९९, २०० ; ३।९, ११, १३, १४, ३५५, ३८०, ४६१, ४७६ ; ४७९, १८४, १८८, २१५, २१६, २६२, ५०७ ; ६।१७१, १७५, ३०३ ; ७।६९६, १३३६ ; ८।२४६, २४८, २४०२, २४१०, ३४१७, २४३१, २४३३, २५५६ २७०६, ३३५२, ३३५३ । हर्षचरितम्—पृ० २१५—२१६, १७६ (मुम्बईसंस्करणम्) । चिन्तामणिविनायकवैद्यकृतमध्ययुगीनभारतवर्षेतिहासस्य पृ० १०३, १३७, १९२, १५३ द्रष्टव्यानि ।

(९) राजेन्द्रलालमित्रस्य इण्डोआरियन्स, खण्ड १. पृ० २५—२६ । निरुक्त—(३।१३) । निघण्टु—(३।४) ।

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अमरकोषे (१), पाणिनीये व्याकरणे (२), तथा च कारणकामिकसुप्रभेदांशुमदाद्यागम-शास्त्रेषु (३), एवं सर्वत्रैव संस्कृतवाङ्मये स्थापत्यभास्करीयादिशिल्पानां न्यूनाधिकं वर्णनमुपलभ्यते । एषु पौराणिकान्यागमिकानि च विस्तृतानि विवरणानि प्रायेण मानसारमूलकान्येवेत्यपि प्रबन्धान्तरे मया दर्शितम् (४) ।

तत्र खलु विट्रुवियासनामधेयः प्राचीनो रोमकशिल्पग्रन्थो लातीनेतालीय-स्पेनीय-परांस-जर्माणाङ्ग्लादिभाषास्वनूदितः परःशतसंस्करणगतः । मानसारवदत्रापि ग्रन्थे सप्ततिमितानि प्रकरणानि । अत्राप्याद्येषु पञ्चाशन्मितेष्वध्यायेषु स्थापत्यशिल्पान्येव वर्णितानि । अवशिष्टेषु यन्त्रादिनिर्माणविधिरुपवर्णितः । मानसारे त्वेतेषु भास्करीयशिल्पवर्णनमेवास्ति । आद्यानामध्यायानां प्रस्तुतविषयक्रमवर्णनविन्यासादावुभयोर्ग्रन्थयोरसंदिग्धं सादृश्यं प्रबन्धान्तरेऽस्माभिः प्रदर्शितम् (५), नामसंज्ञाविषयेऽप्यनयोरद्भुतं सादृश्यं प्रतीयते ।

विट्रुवियास इति कस्यचिद् वास्तुशिल्पिन एव नाम । अस्य शिल्पग्रन्थस्य प्रकृतसंज्ञाप्यासीन्न वेत्यपि न ज्ञायते । आसीच्चेत्सेदानीं लुप्तैव । मानसारमिति नामापि त्वव्यक्तमस्पष्टं संदिग्धमनेकार्थम् । एतदेवाधुना समासेनालोच्यते ।

मानानां स्थापत्यशिल्पानां भास्करीयशिल्पानां च सारो मूलं संकलनं वा यत्र शास्त्रेऽस्ति तन्मानसारमिति ग्रन्थविशेषस्य संज्ञा संभाव्यते । ग्रन्थान्तराणामपीदृश्यः सारान्ताः संज्ञा दृश्यन्ते, यथा वेदान्तसारः, न्यायसारः, ज्योतिःसारः, आचारसारः, लघुशिल्पज्योतिःसार इत्यादयः । प्रस्तुते ग्रन्थे मानसारशब्दस्य द्विविधो व्यवहारः, ग्रन्थकृत्संज्ञारूपेण ग्रन्थसंज्ञारूपेण चेति । ग्रन्थकारपरत्वेऽपि क्वचिद् व्यक्तिविशेषस्य संज्ञात्वेनान्यत्र तु शिल्पाचार्याणामृषीणां संज्ञात्वेनेति । यथा—"कृतमिति अखिलमुक्तं मानसारपुराणैः ।

पितामहेन्द्रप्रमुखैः समस्तैर्देवैरिदं शास्त्रवरं पुरोदितम् ।
तस्मात्समुद्धृत्य हि मानसारं शास्त्रं कृतं लोकहितार्थमेतत् ॥"

(अ० ७० । पं० ११४—११८ पृ० ४१८)

(१) अमरकोषः—२।२।१—२० इ० ।

(२) पाणिनीय०—इण्डोआरियन्स ख० १, पृ० १९ ।

(३) कारणागम—ख० १, पटल ३—१४, १६, १९, २०, ४२, ५६, ५९—६२, ६६, ८८, १३६ । ख० २, प० ४—२०, ९८ । कामिकागम—प० ११—३८, ४२—७२, ७४, ७५ । सुप्रभेदागम—प० २२—४० । अंशुमदागम—प० २८ । वैखानसागम—प० २२, २३ ।

(४) भारतीयशिल्पशास्त्रम्—पृ० १११—१३३ ।

(५) भारतीयशिल्पशास्त्रम्, पृ० १३४—१५९ ।

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अत्र मानसारपुराणैरित्यनेन शिल्पाचार्यसम्प्रदायसूचनम्, मानसारं शास्त्रमित्येतेन च ग्रन्थसंज्ञाभिधानम् । एवमन्यत्रापि, यथा—"मानसार-ऋषीणां कृतं शास्त्रं मानसारमुनिनामकमासीत् ।" (१।३९ पृ० २) "मानानां सारं संगृह्य शास्त्र संक्षेपतः क्रमात्" (२३।२ पृ० १६६)। अत्रापि ग्रन्थसंज्ञैव सूच्यते । "मानसारो बहुः श्रुतः" (७८।११ पृ० ४०८)—अस्माच्छिल्पाचार्यसम्प्रदायस्यैव द्योतनं सम्भवति । "सकलमुनिवरैर्मानसारादिमुख्यैः" (६९।२१९ पृ० ३२१)—अस्मात्तु कस्यचिच्छिल्पाचार्यस्य न तु सम्प्रदायस्य प्रतीतिर्जायते ।

एतावन्त एवास्मिन् मानसारनाम्नि ग्रन्थे मानसार-शब्दस्य प्रयोगा दृश्यन्ते । एभ्योऽस्य शब्दस्य सम्पूर्णार्थोपलब्धिर्नैव सञ्जायते ।

शिलालेखद्वयं (१), मानसर्पः नतु मानसारः इति कस्यचिच्छिल्पिनः संज्ञा समुपलभ्यते । अग्निपुराणेऽपीदृशः सन्देहमूलको मानसारस्योल्लेखो दृश्यते—"तदूर्ध्वं तु भवेद् वेदी सकण्ठा मनसारकम्" (२)—इति । अत्र 'मलसारकम्' 'मानसारकम्' चेति पाठद्वयं सम्भाव्यते ।

खिष्टसप्तमशताब्दीयाचार्यदण्डिविरचिते दशकुमारचरिते प्रधानकुमारपितू राजहंसस्य प्रतिद्वन्द्वी मालववास्तव्यः कोऽपि मानसाराख्यो राजा पौनःपुन्येन श्रूयते (३), यथा—"मगधनायको मालवेश्वरं प्रत्यग्रसंग्रामघस्मरं समुत्कटमानसारं मानसारं प्रति····· संग्रामाभिलाषेण रोषेण महताविष्टो निर्ययौ ।" इति । "राजहंसो मुनिमभाषत, भगवन् मानसारः प्रबलेन दैवबलेन मां निर्जित्य मद्भोग्यं राज्यमनुभवति ।" इति । "अवन्तिसुन्दरी नाम मानसारनन्दिनी····· नगरोपान्तरम्योद्याने विहारोत्कण्ठया मनोभवमर्चयन्ती रेमे ।" इति च ।

सन्दर्भत्रयेऽप्यत्र मानसार इति राज्ञ एव नाम न तु कस्यचिच्छिल्पिन ऋषेर्वेति ध्रुवम् । ग्रन्थकृदाश्रयदातृराजनाम्नापि कदाचिद् ग्रन्थाभिधानं विधीयते—यथा गुप्तवंश्यस्कन्दगुप्तनाम्नैव स्कन्दपुराणस्य समाख्यासीदिति केचिन्मन्यन्ते । हर्षचरितं तु हर्षनृपनाम्नैवेति च । अत्र खलु मानसारग्रन्थे मालवाधिपाभिधयास्य ग्रन्थस्य नामकरणं न कैरपि लक्षणादिप्रकारैर्निर्धारितम् । परं तु षष्ठशताब्दीयबृहत्संहिताया मानसारं प्राचीनतरं पञ्चमशताब्दीयमत्स्यपुराणस्य समसामयिकं चेति मयान्यत्र प्रदर्शितम् (४) ।

(१) एपिग्राफी-प्रोग्रेस-रिपोर्ट—१९०१—सं० १०७, २०९—पृ० १३०, टि० ५ ; पृ० १३०, टि० ५ ; पृ० १७१।१७६, टि० १ ।

(२) अग्निपुराणम्—अ० ४२ श्लो० ११७ ।

(३) मोरेश्वररामचन्द्रकालेकृतसंस्करणम्—१९१७—पृ० ४, १, ४३ ।

(४) अस्मत्कृतभारतीयशिल्पशास्त्रम्—अ० ५—पृ० १६१, १७१, १९७, १९८

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अपि च सन्त्यत्र कारणान्तराणि मानसारस्य पञ्चमशताब्दीयत्वसम्भावनायाम् । तत्रेदमन्यतमम् - मानसारे गुप्तविंशमिति पदं सप्तविंशार्थे प्रयुक्तम्, अतोऽत्र गुप्त-शब्दः सप्तसंख्यावाचक एवेति । तत्र गुप्तवंशे सप्तैव भूपाः प्रधाना आसन्, अतः स्कन्दगुप्तपर्यन्त-सप्तभूपान्तं गुप्तसाम्राज्यमिति । अयमभिप्रायो मानसारप्रणयनकाले सप्त गुप्तनृपा एवं सुप्रसिद्धा अभूवन् यद् गुप्त इति पदं सप्तपर्यायतयैव परिगतमिति ।

ख्रिष्टप्रथमशताब्दीयेन विट्रुवियासनाम्ना ग्रन्थेन सह मानसारस्य विलक्षणं सादृश्यमत्र स्मार्यम् । सादृश्यस्यास्य द्वावर्थौ सम्भाव्येते, रोमकसिद्धान्तवद् भारतीयमानसारमपि विट्रुवियासमूलकम् अथवा मानसारमेवावलम्ब्य विट्रुवियासग्रन्थः प्रणीत इति । किं चैतावुभावपि कस्माच्चित्तृतीयस्मादनिर्दिष्टाद् ग्रन्थात् परम्परागतादाम्नायवचनात् संप्रदायाद्वा विनिर्गतावित्येतदपि सम्भावयितुं शक्यते ।

कदा केन मानसारं विरचितं केन ग्रन्थेन सहास्य कीदृशः सम्बन्धोऽस्तीत्याद्यनुसन्धित्सा न तावत् फलवती भविष्यति यावद् ग्रन्थकृतोऽनन्यत्वं न निर्धार्यते । मानसारः क आसीत् । किमेष कश्चिदृषिः शिल्पी नरपतिर्वा । कोऽस्य पूर्वपुरुषाः कश्चास्य मातामहवंशः । कस्मिन् देशे काले चासौ प्रादुर्भूतः । आहोस्विन्मानसार इति ग्रन्थस्यैव संज्ञा न तु व्यक्तिविशेषस्य । पक्षेऽस्मिन् किमुपज्ञमस्य रचयितृत्वम्, कथं वा ग्रन्थकारपरिचयः सर्वथैव विलुप्तः । मीमांसास्थानं खल्वेतद्वर्ततेऽधुना विशेषज्ञानाम् ।

इत्यावेदयति

श्रीप्रसन्नकुमाराचार्यः ।

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ARCHITECTURE
OF
MĀNASĀRA

TRANSLATED FROM ORIGINAL SANSKRIT

BY
PRASANNA KUMAR ACHARYA, I.E.S.
M.A. (CALCUTTA), PH.D. (LEYDEN), D.LIT. (LONDON)
Dean of the Faculty of Arts, Head
of the Oriental Departments, Professor
of Sanskrit, University of Allahabad

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CONTENTS

	Pages
Preface—	
History of publication	xiii-xv
Preparation of the plates	xv-xviii
Acknowledgments	xix-xxi
Method of translation	xxi-xxiv
General survey	xxiv-xlvi
Relation with other works	xlvi-lvi
Age of compilation	lvi-lix
Translation—	
Chapter I—The Contents	1-3
Chapter II—The Qualifications of Architects and the System of Measurement	5-9
Chapter III—The Classification of Architecture ..	11-12
Chapter IV—The Selection of Site	13-15
Chapter V—The Examination of Soil	17-21
Chapter VI—Erection of Gnomons (for Orientation of Buildings) and Pegs (for Foundation) ..	23-32
Chapter VII—The Site Plans	33-57
Chapter VIII—The Sacrificial Offerings	59-62
Chapter IX—The Village	63-92
Chapter X—The Towns and Forts	93-98
Chapter XI—The Dimensions of Buildings	99-107
Chapter XII—The Foundation	109-121
Chapter XIII—The Pedestals of Columns	123-130
Chapter XIV—The Bases of Columns	131-150
Chapter XV—The Columns	151-174
Chapter XVI—The Entablatures and Roofs	175-185
Chapter XVII—Joinery	187-198
Chapter XVIII—The General Features of Edifices	199-221
Chapter XIX—The One-storeyed Buildings	222-237
Chapter XX—The Two-storeyed Buildings	238-244
Chapter XXI—The Three-storeyed Buildings	245-249

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		Pages
Chapter	XXII—The Four-storeyed Buildings	250 254
Chapter	XXIII—The Five-storeyed Buildings	255-257
Chapter	XXIV—The Six-storeyed Buildings	258-260
Chapter	XXV—The Seven-storeyed Buildings ..	261–263
Chapter	XXVI—The Eight-storeyed Buildings	264–267
Chapter	XXVII—The Nine-storeyed Buildings	268–270
Chapter	XXVIII—The Ten-storeyed Buildings	271–273
Chapter	XXIX—The Eleven-storeyed Buildings ..	274–276
Chapter	XXX—The Twelve-storeyed Buildings ..	277–286
Chapter	XXXI—The Courts	287–293
Chapter	XXXII—The Temples of Attendant Deities ..	294–304
Chapter	XXXIII—The Gate-houses and the Windows ..	305–337
Chapter	XXXIV—The Pavilions	338–372
Chapter	XXXV—The Storeyed Mansions	373–397
Chapter	XXXVI—The Situation and Measurement of Dwelling-Houses	398–403
Chapter	XXXVII—The Opening of the Dwelling-House ..	404–409
Chapter	XXXVIII—The Doorways	410–413
Chapter	XXXIX—The Measurement of Doors	414–422
Chapter	XL—The Royal Palaces	423–431
Chapter	XLI—The Royal Entourage	432–435
Chapter	XLII—The Royal Orders and Ensignia ..	436–441
Chapter	XLIII—The Cars and Chariots	442–450
Chapter	XLIV—The Couches, Bedsteads, and Swings ..	451–456
Chapter	XLV—The Thrones	457–469
Chapter	XLVI—The Arches	470–474
Chapter	XLVII—The Central Theatre	475–477
Chapter	XLVIII—The Ornamental Tree	478–482
Chapter	XLIX—The Crowns	483 496
Chapter	L—The Personal Ornaments and House Furniture	497–515
Chapter	LI—The Triad	516 522
Chapter	LII—The Phalli	523–543
Chapter	LIII—The Altars	544–547
Chapter	LIV—The Female Deities	548–557

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		Pages
Chapter	LV—The Jain Images	558–564
Chapter	LVI—The Buddhist Images	565–566
Chapter	LVII—The Images of the Sages	567–571
Chapter	LVIII—The Images of the Mythical Beings ..	572–573
Chapter	LIX—The Images of the Devotees	574–580
Chapter	LX—The Goose	581–583
Chapter	LXI—The Garuda Image	584–592
Chapter	LXII—The Bull	593–596
Chapter	LXIII—The Lion	597–599
Chapter	LXIV—The Comparative Measures of Images ..	600–605
Chapter	LXV—The Largest Ten *tāla* Measures	606–617
Chapter	LXVI—The Intermediate Ten *tāla* Measures ..	618–623
Chapter	LXVII—The Measures along the Plumb Lines ..	624–632
Chapter	LXVIII—The Casting of Idols in Wax	633–636
Chapter	LXIX—The Penalties for Defective Construction ..	637–640
Chapter	LXX—The Chiselling of the Eye	641–647
Index		649–793
Opinions and Reviews		1A–11A

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PREFACE

History of publication

ARCHITECTURE OF MĀNASĀRA is an English version of a Sanskrit text of that name edited, with critical notes, for the first time by the writer. The text is based on all the eleven available manuscripts gathered together by the then Secretary of State for India, Sir Austin Chamberlain, for the use of the writer. Except one, all other manuscripts are fragmentary and none contains any commentary, drawings, diagrams or sketches. The buildings of the time, religious, military, or residential, do not appear to exist in their entirety for a ready reference. In 1838 Ram Raz based his *Essay on Architecture of the Hindus* on a few chapters of a single fragmentary manuscript. In recent years several other scholars have quoted extracts from one or other of the manuscripts, but no one, including Ram Raz, attempted the translation of any passage. A few Sanskrit texts of architecture have also been printed in the recent years, but none has been translated into English or elucidated in any other language, Indian or European.

It was the great Director General of Archaeology, Sir John Marshall, who conceived the idea, and advised Lord Pentland, the then Governor of Madras, to get a reliable version of the standard work on Indian architecture scientifically edited and properly elucidated, together with sketches, diagrams, and measured drawings, when he (Sir John Marshall) came to know, through Dr. F. W. Thomas, then Librarian of the India Office, London, that I had been working for some time as a Government of India State scholar on the subject in consultation with Mr. E. B. Havell and under the guidance of Dr. L. D. Barnett of the British Museum, Dr. Thomas himself, and Dr. J. Ph. Vogel of Leyden. But the unfortunate coincidence of His Excellency's retirement and Sir John's absence from India at the time of my arrival in Madras upset the preliminary arrangement made for the publication from Madras. On

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my appointment to the Indian Educational Service in the United Provinces, Sir Claude F. de la Fosse, the then Director of Public Instruction, and the first Vice-Chancellor of the reconstructed Allahabad University, took up the matter with scholarly interest and induced the great educationist Governor, Sir Harcourt Butler, to sanction the publication on behalf of the United Provinces Government, through the Oxford University Press.

The work of seventeen years—which Professor E. J. Rapson of Cambridge University correctly predicted to be a life's undertaking—has thus reached its present destination. It is, however, not the end, but the beginning, of a new line of Indology which, it may perhaps be hoped, is likely to prove not merely of cultural and historical interest, but possibly of some practical benefit to the country and to the nation. Our architectural policy of the past few hundred years, based as it has been on foreign imitation, and in an entirely different climate and soil, has not proved quite successful in regard to temples and humble dwelling-houses, if not in regard to public edifices also. That the sole object of a work like the *Mānasāra* was primarily and ultimately practical in giving general as well as special guidance to the builders of that time, as also of the future generations, will be clear even to the casual reader of the book. Whether or not the extant structures which have been restored to the nation by the activity of the Archaeological Department, or which having defied the effect of time and weather, are yet standing almost in their original grandeur, will indicate the application of the rules and regulations, or at least the methods and principles laid down in the *Mānasāra*, remains to be proved. If, after making allowance for existing conditions and requirements, the methods and principles, as well as the rules and regulations laid down in the standard treatise, are found to be scientifically sound and suitable for modern buildings, big and small, they may be experimented with, and the solution of the problems relating to its textual imperfection and historical uncertainty may be left to the care of those whose mission is the elucidation of the past culture.

The preliminary accounts of the subject published in the writer's *Dictionary of Hindu Architecture* and *Indian Architecture according*

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to *Mānasāra Śilpa-śāstra* have awakened a world-wide interest as will be seen from the extracts from reviews and opinions appended at the end of the present volume. This has emboldened me to publish as complete a record as is at present practicable. 'But the reader must understand that these volumes do not claim to be other than provisional. In the nature of things it could not be otherwise. These volumes may open up a new line of Indian achievement and may lead to a task which is just beginning. Fresh materials, facts, and figures are likely to come to light. In such conditions any approach to finality is out of the question.'

Preparation of the plates

Owing to the defective nature of the text, which has been shown elsewhere, one can hardly be perfectly sure of the interpretation. An elaborate effort, involving great expenditure of time, money, and convenience, was made to get into contact with the so-called traditional builders in the south, in the Orissan countries, in the Indian States of Rajputana, Central India, Gujarat, Bombay, in the Frontier Provinces, and in the Hill States, in company with trained and experienced engineers, architects, and interpreters, in the vain hope of getting some light from *salats*. These *salats* are stated to build in accordance with an ancient tradition which, they claim, to have inherited orally in some cases, but mostly from some fragmentary manuscripts that they have frequently failed to interpret.

Another effort, extending over many years and made through many agencies, both official and non-official, to engage the services, against tempting payment, of teachers or advanced students of the few schools of arts and architecture in the Indian States and elsewhere, mostly under the Government, ended also in failure.

In these circumstances, when it was about to be finally decided to publish this first edition without any illustrations, Mr. H. Hargreaves, the then Director General of Archaeology, in camp at Sanchi, while taking rest in the evening, possibly in a meditative mood concerning ancient monuments, was moved by my tale which had been once

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before related to him at his palatial office at New Delhi. He very definitely disagreed with my intention of bringing out such a volume without illustrations, and readily accepted my request to place at my disposal the services of Mr. S. C. Mukherji, B.A., G.D.ARC., A.I.I.A., then a research scholar of the Archaeological Department, whose name had been mentioned to me by his (Mr. Hargreaves') personal assistant, Mr. B. T. Mazumdar, and who was subsequently recommended by Mr. R. L. Bansal, a very enthusiastic engineer of the Public Works Department. As an experienced officer of his exalted position, Mr. Hargreaves stipulated, however, that Mr. Mukherji's services might be available only for a limited period and that I must be present while Mr. Mukherji would be working at his (Mr. Hargreaves') office at Simla, obviously to get the fullest advantage of a joint effort of his whole department and my own.

Mr. Mukherji himself undertook the task with the greatest possible enthusiasm. He had graduated with Sanskrit and ancient history and received training in the method and principle of Græco-Roman and modern architecture. As a part of his training, he had been taken under proper guidance round Nasik, Madura, and other places where he had to examine and sketch ancient Hindu and Muhammadan buildings. He came to know of the *Mānasāra* at the Agra branch of the Archaeological Department, wherefrom Mr. R. L. Bansal used to take books in connexion with the measured drawings he had been making to illustrate the preliminary chapters of the *Mānasāra*. Thus Mr. Mukherji eagerly undertook the task when Mr. Bansal could no longer continue with it.

Mr. Bansal, after his training at Roorkee Engineering College, had been in charge of roads and buildings for several years before he started to make observations, in consultation with Dr. Gorakh Prasad, D.SC., the Reader in Astronomy at Allahabad University, on the astronomical calculation of the *Mānasāra* in connexion with the dialling and orientation of buildings. Mr. Bansal also accompanied me in my tour over Rajputana, including Pushkar, Mount Abu, and Jaipur, where he studied and made copies and sketches of old structures in order to

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ascertain the exact nature of the mouldings that are frequently referred to in the *Mānasāra*. Mr. Bansal's drafts on these objects have been accepted without much alteration and have been finally drawn by Mr. Mukherji. I shall ever remain grateful to Mr. Bansal and Dr. Gorakh Prasad for their very valuable assistance in doing foundation work for the architectural drawings.

For the first three months, Mr. Mukherji and myself worked together at the rate of nearly sixteen hours a day. As a result of this hard work Mr. Mukherji was able to make drafts of the more important chapters, including the one dealing with pillars and columns. The first fruit of his labour apparently satisfied Mr. Hargreaves, who took round Mr. Mukherji's studio big officials, including Sir Frank Noyce, the then Educational Secretary, Mr. A. H. Mackenzie, then Commissioner of Education, and others, in order to explain to them the revelation of the *Mānasāra*. Mr. Mukherji has worked on these drawings for over two years and has earned my everlasting gratitude. Words fail me to express my indebtedness to Mr. Hargreaves and the Archaeological Department, without whose assistance these drawings could not have been prepared.

Thus it can be expected that all preliminary precautions that have been taken at every stage in the execution of the architectural drawings may ensure a faithful representation in lines of what *Mānasāra* expressed in words. The measured drawings, one hundred and thirty-five in number, are appended as illustrations but represent only a fraction of those architectural objects that are actually described in detail. In any event these drawings will supply the much needed materials to determine whether the extant monuments of Hindu architecture were based on the methods and principles governing the details of the village scheme, town-planning, forts and fortresses, and temples, military buildings, gorgeous palaces and humble residential dwellings of various sizes and measures described in the *Mānasāra*.

The sculptural drawings in line and in colours could not be given the same advantage of joint deliberation, mutual consultation, and

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final revision. Despite the fact that there is an ever-growing class of artists all over India, most of those of local renown and teachers of recognized schools of arts in Bombay, Baroda, Delhi, Lahore, Lucknow, Allahabad, Ajmer, Jaipur, Jodhpur, Calcutta, Shillong, Cuttack, Puri, Madras, and Bangalore refused, after due deliberation, to undertake the work; and the few artists who agreed, on their own terms, gave up the task after trials lasting from two to three months. At last Professor M. H. Krishna, M.A., D.LITT., Director of Archaeology, Mysore State, took me to several local artists and undertook to select one for me. But after protracted negotiations lasting over eight months he gave up in disgust the prospect of finding a reliable person for the purpose, declaring that "our old-type artists are so old-worldly in their business habits." But I am thankful to him for having brought me in contact with Śilpa Siddhanti Śivayogi Śrī Siddalingaswamy, the head of the Jagadguru Nāgalingaswamy monastery, who claims to be "a Śilpin by heredity," to have "studied Śilpa, painting, etc., at the feet of Guru" and to have been "training for a quarter of a century a number of youths in the art of sculpture, painting, and kindred subjects according to Śāstric canons." He undertook, after an experiment lasting for nearly a year, to supply twenty-two drawings on which another six months were spent. I believe that he has given the best of his inherited skill, ripe experience, and spiritual study of the subject to these sculptural drawings.

In the absence of the expected assistance and personal supervision of Dr. Krishna, the elucidation of the details had to be carried out in lengthy, and, at times, trying correspondence. I shall, however, remain grateful to Śilpa Siddhanti Śivayogi Śrī Siddalingaswamy who, among all the artists I had approached, had the courage and patience of partly illustrating the sculptural section of the Encyclopædia of Hindu Arts, and hopes to execute the remaining sculptural drawings, numbering some three hundred, if his present performance proves successful and if the *Mānasāra* itself receives the practical recognition it deserves.

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Acknowledgments

The publication of these volumes has been made possible through the generosity of the Secretary of State for India, the Government of India, and the Government of the United Provinces of Agra and Oudh, to whom I can only express inadequately my most respectful thanks. To Professor F. W. Thomas, C.I.E., M.A., PH.D. the then Librarian of India Office, London, I owe most of the materials and general guidance at the early stage of my undertaking : words fail me to express my indebtedness to him.

In addition to the assistance already acknowledged, my gratitude is due to Rai Bahadur Dayaram Sahni, M.A., the present Director General of Archaeology, for his scholarly interest in the work and the friendly appreciation for the past ten years, and to Mr. K. N. Dikshit, M.A., the then Deputy Director General of Archaeology, who used to come to my hotel and spent hours in discussing various obstinate passages which baffled repeated attempts at their interpretation, and who also very generously reviewed the earlier volumes. For his scholarly sympathy and generous appreciation my grateful acknowledgment is due to Mr. H. R. Harrop, M.A., I.E.S., the Deputy Director of Public Instruction. His interest increased through his official correspondence during the past ten years concerning the publication with the Oxford University Press, who, incidentally, have been anxious since the first year of their publication to bring out a second edition of my *Dictionary* and *Indian Architecture*.

For his very encouraging and generous review of the earlier volumes and for affording me all facilities to undertake extensive tours year after year, I shall ever remain grateful to one of the greatest orientialists, Mahamahopadhyaya Pandit Ganganath Jha, M.A., D.LITT., LL.D., until recently Vice-Chancellor of Allahabad University. To my esteemed colleague, Professor C. D. Thompson, M.A., the head of our Economics Department, I am grateful for many linguistic and textual improvements of the architectural section, the penultimate proof of which he revised with great interest. I am grateful to another amateur archaeologist, Mr. P. C. Barat, B.A., for comparing some proofs and

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suggesting certain improvements ; and to Messrs. S. C. Mukherji and N. K. Dasgupta, M.A., B.L., for their valuable assistance in arranging and comparing the index slips, which I prepared myself. My gratitude is due to my colleagues of the Sanskrit Department, Dr. B. R. Saksena, M.A., D.LITT., Dr. Umesh Misra, M.A., D.LITT., Pandit K. Chattopadhyaya, M.A., and Pandit Raghubar Mithulal Shastri, M.A., M.O.L., for their scholarly interest, friendly sympathy, encouraging appreciation, and various assistance from time to time. Not only for general encouragement, but also for valuable suggestions and constructive criticism of the earlier volumes, I am grateful to the reviewers whose opinions are quoted at the end of this volume.

Like many other people, my gratitude is due to Shrimant Bala Shahib Pant Pratinidhi, B.A., the renowned Ruler of Oundh who has done so much to revive our ancient culture and to unfold our artistic treasures. He has taken a very great interest in the publication of the *Mānasāra* and intends to build a house according to the direction of this standard *Śilpa-śāstra*.

Last, but not least, I am pleased to acknowledge my grateful thanks to Mr. D. W. Crighton and his staff for their ever sympathetic and kind treatment towards me and for their patient and careful handling which was necessary in bringing out a volume like this. For his personal interest in the work and for many useful suggestions and improvements I am further indebted to Mr. Crighton, who readily took the trouble of revising this Preface.

But for a very special reason it would be rather unusual to give publicity to and acknowledge with grateful recollection the indirect assistance, indispensable as it has been, received from one's own people. Miss Śakti Chatterjee, who was educated in a convent school for girls at Shillong, though connected with Dr. Rabindranath Tagore, had acquired no artistic skill when she became my wife in 1923. Since our marriage, however, the traditional love of the Tagore family for arts, which may have been latent in her, came to help me immensely. She suddenly developed an enthusiasm for the completion of these volumes and contented herself with a

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sort of desertion during all these long years because I had almost wedded myself to the *Mānasāra* and had to give to this task all the attention and time, even during Sundays and long vacations, which could be spared from the strenuous duties of the Professor of a University (newly reconstructed into a residential institution for the first time in India), of the Head of a department of classics in these days of science, and the Dean of a Faculty including some thousand students and some hundred teachers of all ranks and of all temperaments. But for her enthusiasm these volumes, comprising some three thousand pages of crown quarto size, could not have been published in another ten years' time, for my own patience and temper, as well as my eyesight, were put to a severe trial in doing everything single-handed in one stretch, without taking any leave or holiday since the work was begun in 1914.

Method of translation

None knows more clearly than myself what imperfections are to be found in this first attempt at translating such an imperfect text on such highly technical subjects. I owe it, therefore, to the reader to indicate the general method I have closely followed. In the translation of the Text I have endeavoured to adhere as closely as possible to the language of the original. It has consistently been my aim to reproduce the bare meaning of the *Mānasāra*, and to avoid, as far as can be done, taking liberties with the language in order to bring out meanings other than what the most obvious and ordinary natural interpretation would suggest. Notwithstanding this, however, I found myself obliged in some cases to deviate from a strictly literal treatment. The reason for this was mainly the very peculiar nature of the Text and its inconsistent construction, following, as it seemingly does, no rules of grammar. Under such circumstances, there being no standard to which the language can be made to conform, a particular passage may naturally lend itself to wide speculation and diverse conjectures. The method I have followed in such cases has been to avoid the tendency towards speculation and broad construction, and to attempt a more or less free rendering

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only so far as it was obviously necessary, or there was at least a high degree of probability to warrant it. There were some passages, for example, which in spite of the clear discrepancies in grammar did not fail to show what was meant. There were others which presented greater difficulty and it was only after a careful comparison of these, with other parts of the Text, and a reference to the passages in other works such as the *Āgamas*, *Purāṇas*, and a number of manuscripts on the *Śilpa-śāstra* dealing with similar matters of better construction, and easier interpretation, that I was enabled to explain their sense.

Besides the grammatical confusion, there was another great difficulty I was faced with owing to the technical nature of the subject. There are various words used in a strictly technical sense, differing entirely from their derivative literal renderings. It is from the very nature of these an extremely difficult task to trace the exact significance of forgotten ancient technical expressions. I have attempted to some extent to apportion to these technical terms certain fixed meanings although there appears to be an apparent disagreement on particular occasions. Below are instanced a few of such difficulties :

(1) The words Tāra, Vistāra, and Viśāla seem, generally speaking, to have been used to signify length, breadth, and width, and I have rendered them as a rule accordingly. Occasionally, however, passages are met with in which such a distinction between the words is not apparent. Both Tāra and Viśāla are sometimes used in the sense of Vistāra or breadth.

(2) The words Aṁśa, Mātra, and Aṅgula have been used indiscriminately to signify either one of any number of equal parts into which the length or height of a particular object is divided, or a fixed standard of measurement either absolute or relative.

It is, however, laid down in the Text that the Aṅgula measurement is of four kinds—

(*a*) the Bera Aṅgula is stated to be the measurement by the finger-breadth of the idol ;

(*b*) the Deha Labdha Aṅgula is nothing but one of the equal parts into which the length or height of the idol is divided ;

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(*c*) the Mātra or Mātrāṅgula means the finger-breadth of the master or architect but it is also used as one of the equal parts into which the height of the master or a structure is divided ; and

(*d*) the Mānāṅgula is the Aṅgula proper ; this is the standard measurement equal to about three-fourths of an inch. But in use there appears to be no more distinction made between these different kinds of Aṅgula than between the words Aṁśa, Mātra, and Aṅgula themselves.

(3) The names of the different mouldings or the different parts of a structure are not clearly distinguished. The Text for example gives the following sets of words as synonyms :

Kapota—Prastara, Mañcha, Prachchhādana, Gopāna, Vitāna, Valabhi, Mattavāraṇa, Vidhāna and Lupā.

Mañcha—Prati, Prastara, Prativājana, Anvanta, Avasāna, Vidhāna, and Vidhānaka.

Vājana—Kshepaṇa, Vetra, Paṭṭa, Uttara, Paṭṭikā, Kampa, Dṛikka, Maṇḍa, Antarita, etc.

Tulādaṇḍa—Jayanti, Phalakā, Kapota, Vaktra-hasta, Lupā, Gopānaka, Chandra, etc.

Jaṅghā—Charaṇa, Stali, Stambha, Aṅghri, Sthāṇu, Sthūṇa, Pāda, Kampa, Araṇi, Bhāraka, and Dhāraṇā.

But it appears very clear from the way these different words are used, that there is a distinction between them. I have attempted to explain elaborately most of these in the *Dictionary*.

In a few cases of technical expressions which are now obsolete and the exact significance of which is often doubtful or conjectural I could not find suitable terms and phraseology of the science to translate them. The literal meanings of the words would convey no sense at all. If we have to coin words for these, it would be necessary to have the assistance of the artist on the one hand, of the philologist on the other, and a reference to existing buildings. For the present I have thought it better to quote the original expressions either untranslated altogether, or with literal meanings of them in bracket.

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I have thus endeavoured to follow the general lines adopted by Dr. Bühler in translating the *Manu-saṁhitā*. But in place of Bühler's citation of different commentaries on the *Manu-saṁhitā* I have referred to the numerous illustrative passages, not from commentaries on the *Mānasāra*, of which there are none, but from other *Śilpa-śāstra*, inscriptions, *Āgamas*, *Purāṇas*, and other general literature which have been gathered together in my *Dictionary*. It was, however, not possible to quote all these numerous references in the footnotes.

General survey

So far as the contents of the *Mānasāra* are concerned it will be a mere repetition to give a detailed summary, as that has once been separately published from Leiden (1917) and has also been included in the writer's *Indian Architecture* (1927). It will be enough to refer to the main points. It will be noticed that of the seventy chapters the first eight are introductory, the next forty-two deal with architectural matters, and the last twenty-one are devoted to sculpture.

It opens, following the usual custom, with a prayer to the Creator Brahmā and touches upon the origin and development of the science of Architecture, from Śiva, Brahmā, and Vishṇu, through Indra, Bṛihaspati, and Nārada, to the class of seers (*ṛishi*) called Mānasāra, and concludes the introduction with a list of the chapters. Of the preliminary matters, two distinct subjects, namely, the system of measurement and the qualifications of an architect, are dealt with next (Chapter II). *Aṅgula* (finger's breadth), equivalent to three-fourths of an inch, is the unit of architectural measures. The *tāla* (span between the tips of fully stretched thumb and middle finger) is the unit of sculptural measure, which is regulated by the length of the face, inclusive of head, of an image. This latter system of measure is dealt with in several chapters of the sculptural section.

Architects are divided into four classes. Together they form the guild of architects, each an expert in his own department but possessing a general knowledge of the science of architecture as a whole.

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They consist of the chief architect (*Sthapati*), the designer or draftsman (*Sutrāgrāhin*), the painter (*Vardhaki*), and the carpenter or joiner (*Sūtradhāra*). Different sets of qualifications are prescribed for each class, the gist of which may be expressed in the words of the Roman architect Vitruvius : 'an architect should be ingenious, and apt in the acquisition of knowledge ; he should be a good writer, a skilful draftsman, versed in geometry and optics, expert at figures, acquainted with history, informed on the principles of natural and moral philosophy, somewhat of a musician, not ignorant of the sciences of law and physic, nor of the motions, laws, and relations to each other, of the heavenly bodies.' He must possess a wide outlook, bold temperament and self-control, and be endowed with all qualifications of a supreme managing director. He must be free from disease or disability and from the seven vices, like gambling, addiction to women, etc.

The next chapter (III) called *Vāstu-prakaraṇa* defines the different branches of architecture, which are divided into four classes, namely, the ground, buildings, conveyances, and couches. The two following chapters (IV, V) on examination of soil and selection of site deal with the contour, colour, odour, features, taste and touch, elevation of the ground, and growth thereon of certain plants, trees, grasses, whereupon a village, town, fort, palace, temple, or dwelling house is to be built. Chapter VI deals with the orientation of buildings and recommends that a residential building should preferably face the east or the north-east, and never the south-east. Incidentally the principles, mechanics, and details of dialling are exhaustively described. The site-plans are next described (Chapter VII) : thirty-two schemes are distinguished, each of which is divided into squares of various numbers. Following the usual custom, this preliminary section concludes with a chapter (VIII) on offerings to the presiding deities of the site.

Town-planning is the next subject described in great detail in two chapters (IX, X). It is treated under two heads, *Grāma-lakshaṇa* (village scheme) and *Nagara-vidhāna* (lay-out of towns), and under three categories, village, town, and fort. Villages are divided into eight classes called *daṇḍaka, sarvatobhadra, nandyāvarta, padmaka,*

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svastika, prastara, kārmuka and *chaturmukha* : each of these, as the names indicate, represents a particular design and lay-out of which detailed measures and other particulars are given. Towns are also divided into eight classes : *Rājadhānī, nagara, pura, nagarī, kheṭa, kharvaṭa, kubjaka,* and *pattana.* Forts are first divided into eight classes according to the size and the object and are called *śibira, vāhinimukha, sthāniya, droṇaka samviddha* or *vardhaka, kolaka, nigama,* and *skandāvāra.* According to their situation they are further classified into the mountain fort, water fort, chariot fort, divine fort, clay fort, and mixed fort. The mountain fort is further subdivided into three classes as it is built on the top of a mountain, in the valley and on the slope.

The next chapter (XI) describes in detail the proportions of breadth, length, and height of buildings of one to twelve storeys, assigned to persons of different ranks. Five forms, namely, square, rectangular, octagonal, round, and oval, are prescribed for buildings of four different classes, *jāti, chhanda, vikalpa,* and *ābhāsa.* These forms are equally applicable to religious, military, and residential buildings. A palace of five to twelve storeys is stated to suit the emperor or universal monarch, highest in rank among the nine classes of kings. Residences of one to three storeys are assigned to the heir-apparent and the chief feudatories, and so on.

Chapter XII deals with the foundations whereupon buildings, villages, and tanks are built. The foundation is excavated up to the depth of man's height with uplifted arms in the rocky or sandy ground as may be available and best suited to the structure to be erected. It is laid down that the bottom of the pit should be rocky or watery. The different materials to fill up the pit and various processes and measures are specified in great detail. The gist of the directions on foundations may be best expressed *mutatis mutandis* in the words of Vitruvius : 'When we are satisfied with the spot fixed on for the site of the city . . . the infoundations should be carried down to a solid bottom, if such can be found, and should be built thereon of such thickness as may be necessary for the

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proper support of that part of the wall which stands above the natural level of the ground. They should be of the soundest workmanship and materials, and of greater thickness than the walls above. If solid ground can be come to, the foundations should go down to it and into it, according to the magnitude of the work, and the sub-struction be built up as solid as possible. Above the ground of the foundation, the wall should be one-half thicker than the column it is to receive so that the lower parts which carry the greatest weight, may be stronger than the upper part . . . . Nor must the mouldings of the bases of the columns project beyond the solid. Thus, also, should be regulated the thickness of all walls above ground. The intervals between the foundations brought up under the columns, should be either rammed down hard or arched, so as to prevent the foundation piers from swerving. If solid ground cannot be come to, and the ground be loose or marshy, the place must be excavated, cleared, and either elder, olive, or oak piles, previously charred, must be driven with a machine, as close to each other as possible, and the intervals between the piles filled with charcoal. The heaviest foundations may be laid on such a base.'

The next four chapters (XIII—XVI) deal with the column and its different component parts, namely, the pedestal, the base, the shaft, and the entablature, and their various mouldings and ornaments. Twelve kinds of pedestals are described with detailed measurements of the various mouldings of each pedestal. The variety, the beauty of proportion, and the richness of ornaments are remarkable. The same remark is true with regard to the bases also which are described in detail under sixty-four varieties. While in Græco-Roman orders the forms and dimensions of both the base and the pedestal are fixed by invariable rules with respect to the orders in which they are employed, in the Indian orders, it will be noticed, the choice is left to the option of the architects. The entablatures, including the capital, and comprising the architrave, frieze and cornice, are described in detail under eight varieties. Their massiveness offers a striking contrast to the lightness of the Grecian entablatures.

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Columns are divided into five orders in regard to general shapes and are called *Brahmakānta*, *Vishṇukānta*, *Rudrakānta*, *Śivakānta*, and *Skandakānta*. With respect to dimensions and ornaments columns are classified under *Chitrakarṇa*, *Padmakānta*, *Chitraskambha*, *Pālikā-stambha*, and *Kumbha-stambha*.

In the *Matsya-purāṇa*, the *Bṛihat-saṃhitā*, and the *Kiraṇatantra* columns are also divided into five classes and are called *Ruchaka*, *Vajra*, *Dvi-vajra*, *Pralinaka*, and *Vṛitta*. In the *Suprabhedāgama* the names of the five orders are *Śrīkara*, *Chandrakānta*, *Saumukhya*, *Priyadarśana*, and *Śubhaṅkarī* which is composite of *Saumukhya* and *Priyadarśana*. The Græco-Roman orders, as is well known, are also five in number and are called Doric, Ionic, Corinthian, Tuscan, and Composite.

The total number of mouldings or the component parts of the column, including those of the pedestal, base, and entablature are forty-seven in the *Mānasāra*. The mouldings of the shaft alone number five and are called *bodhikā*, *mushṭi-bandha*, *phalakā*, *tāṭikā*, and *ghaṭa*.

The *Suprabhedāgama* describes two sets of seven mouldings, one set referring to the column of the main building and the other set to that of the pavilion, and are called respectively, *daṇḍa*, *maṇḍi*, *kaṇṭha*, *kumbha*, *phalakā*, *virakaṇṭha* and *bodhikā* ; and *uttara*, *potikā*, *vijana*, *mūrdhikā*, *tulā*, *jayanti* and *tala*. In the *Matsya-purāṇa*, the *Bṛihatsaṃhitā*, and the *Kiraṇa-tantra*, the mouldings are eight in number and bear the same names : *vāhana*, *ghaṭa*, *padma*, *uttaroshṭha*, *bāhulya*, *hāra*, *tulā*, and *upatulā*. The component mouldings of the Græco-Roman orders are also eight in number and are known as (1) the ovolo, echinus or quarter-round, (2) the talon, ogee or reversed cyma, (3) the cyma, cyma-recta, or cymatium, (4) the torus, (5) the scotia or trochilos, (6) the cavetto, mouth or hollow, (7) the astragal, and (8) the fillet, listel or annulet.

The concluding chapter (XVII) on the preliminary subjects deals with joinery. The wood-joining is of various kinds and forms. Pieces of wood are joined in such a way as to make the figures of *nandyāvarta*, *svastika*, *sarvatobhadra*, and such other shapes. Some kinds of wood are strictly forbidden to be joined with some others.

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The next chapter (XVIII) deals with certain general features of buildings which are specified in the following twelve chapters (XIX—XXX). A brief reference is made in the beginning to the foundations. Then the subjects are divided under several headings. First the classification of buildings of one to twelve storeys, and the proportionate dimensions thereof are described very elaborately and various alternatives are given. The three styles, *Nāgara*, *Vesara*, and *Draviḍa*, and their distinguishing features based on the shapes of the top portions (*śikhara*, spherical roof) are next described. Then are described in order the domes, the pinnacle staffs, the pentroofs, and the front porches, of each of which the classification, dimensions and other particulars are given in detail. The chapter concludes with a description of the building materials, namely stone, brick, wood, and metal (*lit.*, iron), and the classifications of buildings thereunder.

The chapter on 'Single-storey buildings' (XIX) opens with further classifications of buildings under *jāti*, *chhanda*, *vikalpa*, and *ābhāsa* based on the length of the cubit, which is taken as the unit of measure; under *sthānaka*, *āsana*, and *śayana*, otherwise called *saṁchita*, *asaṁchita*, and *apasaṁchita* based both on the standard of measure, which may be respectively height, breadth and length, and on the erect, sitting, and recumbent postures of the idols when the buildings happen to be temples; lastly, under masculine, feminine, and neuter, based on the equiangular, rectangular, and circular forms, as also on the sex of the main deity to be installed when the building is used as a temple.

After a brief reference to the dimensions of the storey the comparative measurement and plans are described at great length. The whole height of the building is divided into a certain number of equal parts which are distributed in a happy proportion amongst the component members, namely the base, pillar, entablature, neck, dome and pinnacle. Similarly, the length of the entire temple is divided into a certain number of equal parts which are also distributed amongst various rooms and halls, such as the shrine, the anterooms, the pavilion, etc. A detailed account of the water-channels, like those of the *Mahenjodaro*, is added. Steps and staircases are

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described at the end of Chapter XXX. The concluding portions of Chapter XIX and the next eleven chapters are devoted to an enumeration of the various deities with whose images the doors and walls of buildings are decorated. The Buddhist and the Jain temples are stated to be similarly built, with this difference, that in those temples the images of Buddhist and Jain deities are installed.

There are eight types of single-storey buildings indicating different designs and bearing technical and mostly significant names. Similarly, the buildings of two storeys are divided into eight types, of three storeys into eight types, of four storeys into eight types, of five storeys into eight types, of six storeys into thirteen types, of seven storeys into eight types, of eight storeys into eight types, of nine storeys into seven types, of ten storeys into six types, of eleven storeys into six types, and of twelve storeys into ten types. The last ten types are given geographical names and seem to imply ten provinces into which whole India was architecturally divided—*Pāñchāla* (the Punjab), *Drāviḍa* (Deccan), *Madhyakānta* (Doab), *Kaliṅgakānta* (Coromandal Coast), *Virāṭa* (Jaipur), *Kerala* (Malabar), *Vaṁśakānta* (Kauśāmbī), *Magadhakānta* (South Bihar), *Janakakānta* (North Bihar), and *Sphurjaka* (? Gurjara,)[1].

The compound of a big house, temple, or palace, is divided into five courts (Chapter XXXI). The fourth court, after which the chapter is named *Prākāra*, is divided into *jāti*, *chhanda*, *vikalpa*, *ābhāsa* and *kāmya* classes, as also into *śuddha* (of one material), *miśra* (of two materials), and *saṅkīrṇa* (of mixed materials) classes. At the outset a reference is made to five kinds of *prākāra* buildings in connexion with *bali* (offerings), *parivāra* (attendant deities), *śobhā* (beauty), and *rakshaṇa* (defence). The shrines of the attendant deities in connexion with a big temple, and the gate-houses both for temples and palaces are very briefly described in conclusion, the next two chapters being entirely devoted to a special treatment of these two subjects.

The temples of the attendant deities are stated (in Chapter XXXII) to be built round the *prākāra* (court). At the eight cardinal points

[1] For identification of these places see details in the writer's *Indian Architecture*, pp. 173-175.

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of the innermost or the first court, the shrines of a group of eight deities are built. Groups of sixteen and thirty-two deities are located in the second and the third court respectively. Between the third and the fifth court is said to be a special pavilion. After an elaborate description of the situation of the shrine for each of the deities of the three groups, the attendant deities of Vishṇu are described in detail.

Chapter XXXIII deals with gate houses of various kinds which are assigned to both temples and palaces. They are first divided into five classes as they belong to the five courts and bear very significant names : *dvāra-śobhā* (beauty of the gate), *dvāra-śālā* (gate-house), *dvāra-prāsāda* (gate-palace), *dvāra-harmya* (gate-mansion) and *mahā-gopura* (great cow-house). Each of these five classes is sub-divided into three sizes : small, intermediate and large. Under each of these fifteen varieties the gate-houses are elaborately described. They are further divided into ten classes, bearing ten different technical names, with regard to the number of domes, pinnacles, neck-peaks, and vestibules. They are made one to sixteen storeys high. The dimensions and ornaments of each storey are described in detail. Pillars, entablatures, roofs, walls, floors, doors, etc., are also fully described.

The chapter closes with an interesting description of windows, not only for gate-houses, but also for other kinds of buildings, both religious and residential. Windows admit of various patterns represented by the following designations : *nāga-bandha* (snake-band), *valli* (creeper), *gavāksha* (cow's eye), *kuñjarāksha* (elephant's eye), *svastika* (cross-shape), *sarvatobhadra* (a special design), *nandyāvarta* (another special design), and *pushpa-bandha* (flower-band). They are decorated with floral and foliated ornaments, as well as with decorative devices in imitation of jewels. The dimensions are mostly left to the discretion of architects with a general direction in regard to the windows for gate-houses.

Detached buildings situated both within the compound and outside, have been described in great detail in the chapter (XXXIV) on 'Pavilions.' Pavilions are single-storey buildings, generally

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self-contained, but sometimes they imply the special rooms in a house. They are also built on the roadside and on the sea-shore ; on the banks of a river, tank, or lake.

Various component members of pavilions such as walls, roofs, floors, verandahs, court-yards, doors, windows, pillars, sheds, etc., are described in detail. Seven pavilions bearing the names of the seven well-known mountains are stated to be built in front of the main edifice and to be used as a bath-room, study, library, and so forth.

Pavilions bearing other names and descriptions are mentioned for wedding and other ceremonies, for kitchen, for storing water, etc., for guests, elephants, horses, and for pilgrimage, etc. The chapter closes with a description of the forms and shapes of pavilions. The *jāti* shape is given to the pavilions of the temples and the residences of the Brahmans, the *chhanda* shape to those of the Kshatriyas, the *vikalpa* shape to those of the Vaiśyas, and the *ābhāsa* shape to those of the Śūdras. Again, the pavilions are classified under technical names in accordance with the number of their faces, which vary from two to six.[1]

Chapter XXXV deals with the 'Storeyed Mansions' which consist of rows of buildings varying from one to ten. The blocks of buildings varying in number of storeys up to twelve are artistically joined up. They are classified under six main groups called *Daṇḍaka*, *Svastika*, *Maulika*, *Chaturmukha*, *Sarvatobhadra*, and *Vardhamāna*. Each of these is again sub-divided into several types : the arrangement of the *Daṇḍaka* mansion, for instance, is described under eight varieties. The *Daṇḍaka* is an isolated mansion and consists of a single row of buildings and would look like a stick (*daṇḍaka*). The *Svastika* mansion is plough-shaped and consists of two rows of buildings. The *Maulika* mansion is shaped like a winnowing basket and consists of three rows of buildings. The *Chaturmukha* mansion is four-faced and consists of four rows of buildings. The *Sarvatobhadra* mansion consists of seven rows of buildings, and

[1] In the *Matsya-purāṇa* (chap. 270, v. 1–16) pavilions are divided according to the number of pillars (see the writer's *Dictionary*, pp. 471–472).

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the *Vardhamāna* of ten rows of buildings. These huge buildings are naturally meant for kings, to the nine classes of whom they are assigned in accordance with the importance of the mansions and the rank of the king. But they are also stated to be used by the Gods, the Brahmans, the Kshatriyas, the Vaiśyas, the Śūdras, the ascetics, the hermits, the priests, the Buddhists, the warriors fighting with the help of the horse, the elephant, and the chariot, the artists and the courtesans. Their lay-out, architectural members with dimensions, ornaments, and other details are fully described.

Chapter XXXVI deals with the situation and dimensions of houses fit for the residence of the twice-born and all other castes. They may be built in a village, city, trading centre, on sea, on the bank of a river, on the side of a hill, etc. The length of a house may be one-and-a-quarter to four times the breadth. On the central plot of the innermost court is generally built a temple or public hall. Around this are constructed dwelling-houses for the master of the family, his wife and children, servants, sheds for cows, horses, poultry, etc., kitchens and dining halls, guest houses, reading rooms, halls for daily sacrifice, music, dancing girls and for all other domestic purposes. Excepting the extreme boundary wall these houses are generally built in order on one side of the (partition) wall. Thus are stated to be built 'in accordance with the rules of the science of architecture, temples, residences, monasteries, treasuries, law-courts, stables, etc., as described in case of towns' (Chapters IX, X). This chapter corresponds in a way to Chapter XXXII where the situations of shrines for attendant deities are described.

The next chapter (XXXVII) describes the ceremonies in connexion with the opening of and first entry into a house.

Chapters XXXVIII and XXXIX are devoted to a description of doors, including what is called the water-door or drain, and dormer-windows, windows proper having been treated at the end of Chapter XXXIII. In the former of these two chapters mainly the situations of doors are elucidated, while dimensions, constructional details, ornaments, etc., are referred to in the latter chapter.

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Chapters XL—XLII deal primarily with the palaces of kings of various ranks. Incidentally, the royal orders, insignia, qualifications and entourage, including the strength of the army and revenue, are mentioned in two chapters (XLI—XLII). The royalty is divided into nine classes, namely the *Chakravartin*, *Mahārāja* also called *Adhirāja*, *Narendra*, *Pārshṇika*, *Paṭṭadhara*, *Maṇḍaleśa*, *Paṭṭabhāj*, *Prāhāraka*, and *Astragrāha*. Their characteristics are described in detail (in Chapter XLII). The general and individual qualifications of these kings, as also the army and entourage of each class, are given in Chapter XLI. Very minute details of the palaces of each of these nine classes of kings are described in full in Chapter XL. Palaces are naturally the most gorgeous buildings and the large ones are furnished with as many as seven courts in place of the five courts referred to in Chapter XXXI, which are meant for large temples and edifices.

Other buildings which are necessary adjuncts to the palace of an Indian King include the coronation pavilion, audience halls, arsenals, treasury, store rooms, etc., in addition to the gorgeous inner apartments and residences for private use of queens and others. In the outer part are situated the offices and the residences for the Crown Prince, family priests, ministers and others. Stables are generally situated near the main gate. Prisons are built in an out-of-the-way place. Pleasure gardens, groves, tanks, arena for ram fights, etc., are assigned their proper places.

In Chapter XLIII cars and chariots for the ceremonial and ordinary use of Gods, Brahmans and Kings, as well as for war and other purposes, are treated with all architectural details. Their wheels, storeys, pinnacles, etc., and the shapes, dimensions, ornaments, and mouldings are described in detail. They are once classified under the four main styles, namely the *Nāgara* (square), *Drāviḍa* (octagonal), *Vesara* (circular, i.e. round) and *Kāliṅga* (hexagonal). Then with regard to the number of porticos (*bhadra*) and other features they are classified as *nabhasvān-bhadraka*, *prabhañjana-bhadraka*, *nivāta-bhadraka*,

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pavana-bhadraka, prishada-bhadraka, chandraka-bhadraka and *anila-bhadraka.*

Chapter XLIV deals with couches and swings which are meant for the use of deities, the twice-born, and the members of the other castes. They admit of two sizes, large and small, and are described with all constructional details.

The next chapter (XLV) is devoted to a description of thrones. The royal thrones are divided into four classes, called *prathama* (first coronation), *mangala* (auspicious, a stage of coronation), *vīra* (heroic, a stage of coronation) and *vijaya* (victory, a stage of coronation). The divine thrones are also divided into four classes according to the occasion of use : the *nityarchana* throne is for daily worship, the *viśeshārchana* throne for special worship, the *nityotsava* throne for ordinary (daily) festival, and the *mahotsava* throne for the great festival. An elaborate account of the general plans, dimensions, ornaments and other architectural details of both the royal and the divine thrones is given under ten types, namely, *padmāsana, padma-kesara, padma-bhadra, śrī-bhadra, śrī-viśāla, śrī-bandha, śrī-mukha, bhadrāsana, padma-bandha,* and *pāda-bandha.* These thrones are specifically assigned to the great Gods, the Buddhist and the Jain deities, as also to the Kings of nine orders.

Chapter XLVI deals with arches. The first three lines where the objects of arches are specified are not well preserved. The tentative translation would run thus : " Arches are made for (the decoration of) the (temples of) gods and the (palaces of) kings, for (ordinary residential buildings, as well as for) the upper portions of all kinds of thrones." In the writer's *Dictionary* numerous references to the arch have been gathered together from other chapters of this text and also from various literature and inscriptions, wherefrom it may be clear that the principles and use of the arch in buildings were sufficiently known to the old architects.

Various forms of the arch are described in this chapter. It may be triangular, circular, crescent-shaped, bow-shaped, or of any other suitable form. Other features and the rules for their construction

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are fully described. With regard to the ornamentation, arches are divided into four types : *patra-toraṇa* (foliated arch), *pushpa-toraṇa* (floral arch), *ratna-toraṇa* (jewelled arch) and *chitra-toraṇa* (ornamental arch). Arches are also stated to be supported by leographs which are placed on both sides of the pillars.

Chapter XLVII deals with the open shedyard (*mukta-prapāṅga*), and the (closed) central theatre (*madhya-raṅga*) which is generally erected to serve as a stage in the courtyard of big temples and palaces and is furnished with raised platforms, galleries, and royal seats, etc. Their architectural details, together with various dimensions and ornaments, are described in full. The materials of which they are built are stated to be wood, stone, brick, and metal (*lit.* iron).

The next chapter (XLVIII) is devoted to the description of a decorative device called 'the ornamental (all productive mythic) tree' (*kalpa-vṛiksha*) which is used over the thrones, open shedyards, pavilions and arches. The minute description and detailed measurement of the various parts of the tree are given. Its trunk is stated to have a serpent coiling round it with an expanded five-fold hood. Incidentally, the measurement of the tail, hood, etc., of the snake is given in detail. The tree is also decorated with creepers, leaves and flowers of various colours and forms. Jewels and garlands of pearls are inserted in suitable situation. Figures of deities, demigods, monkeys, etc., are placed in the intervals between the branches.

The primary object of the next chapter (XLIX) is to describe really the crowns of gods, goddesses, kings and queens of various orders. The ceremonies in connection with the coronation of kings are incidentally described. The chapter is, however, named 'Coronation' instead of 'Crowns.' The crowns are divided into twelve types, namely, *jaṭā*, *mauli*, *kiriṭa*, *karaṇḍa*, *śirastraka*, *kuṇḍala* (*kuntala*), *keśabandha*, *dhammilla*, *alaka*, *chūḍā*, *mukuṭa*, and *paṭṭa*. The design, dimensions, ornaments, number of jewels set in every one of these crowns, as also other architectural details and the names of users and the occasion of the use are elaborately described. The height of the crowns varies in accordance with the importance of the divine or royal bearers,

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The chapter closes with a recapitulation of the four forms of coronation and the direction as to the conduct of the ceremonial regal procession.

The ornaments of the body and articles of house furniture are described in the next chapter (L) which is the last chapter on architectural subjects. The personal ornaments are divided into four groups. The *patrakalpa* is so called because it shows foliated decoration. The *chitrakalpa* consists of floral and foliated designs and precious stones. The *ratnakalpa* is made of flowers and jewels and the *miśrakalpa* consists of a mixture of all the others. All these are suited to the deities. The universal monarch, the first of the nine orders of kings, can put on all these excepting the *patrakalpa*. The *miśrakalpa* is prescribed for all other kings. In addition to these general divisions, a list of some thirty personal ornaments is given with details.

The articles of furniture are divided into seven general groups consisting of lamp-posts, fans, mirrors, wardrobes (baskets and chests), palanquins, balances, and cages. The architectural details including measurement of some fifteen cages are given in full.

Chapter LI on 'Triad' is the first chapter of the sculptural section. This section opens with a detailed account of the materials of which images are made, the specially sculptural measurement being treated in chapters LV, LXVII. The materials are divided (in Chapter LI) into nine classes, namely gold, silver, copper, stone, wood, stucco, grit (also sugar or gravel), glass and terra-cotta. 'Both the movable and the stationary images should be made with these nine materials; (of these) the metallic substances (i.e. gold, silver and copper) as well as stucco, grit, glass, and terra-cotta are stated to be the materials for the movable images; and the rest (i.e. stone and wood) are known to be for the immovable images.'

The *chitrāṅga, ardha-chitrāṅga* and *ābhāsāṅga* are said to be the three kinds of images. That of which all the limbs are made visible is called the *chitra* (high relief), that of which half the limbs are visible is called the *ardha-chitra* (middle relief), and that of which one-quarter limbs are visible is called the *ābhāsa* (low or bas-relief). But the

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ābhāsa images may be otherwise made (painted) on a tablet or a wall with five colours.

Idols are made in the erect, sitting, recumbent and dancing postures. The poses, namely, the equipoise, flexion, three flexions, and excessive flexions are referred to in a later chapter (LVII).

After this preliminary account the sculptural details of the images of Brahmā, Vishṇu and Śiva are given in full. Brahmā is furnished with four arms and four faces. Two of his hands are curved in the boon-giving and refuge-offering attitudes. The attributes held in his hands are the water-pot and the rosary, or the large and small sacrificial ladles. He wears a diadem and the matted hair, a strip of bark, an upper garment, and various ornaments. His whole body is of golden colour. His limbs are measured in the large type of ten *tāla* measures of which details are given in a separate chapter (LXV). He is accompanied by his two goddesses, Sarasvatī and Sāvitrī, standing to his right and left respectively, who are measured in the middle ten *tāla*.

Vishṇu is also four-armed, but has one head. His head-gear is the diadem called *kirīṭa*. He wears a yellow garment, while the colour of his body is dark blue. His chest is adorned with the symbol called *Śrīvatsa*. Two of his hands are in the gift-bestowing and refuge-granting attitudes. His attributes are the lotus-flower, the mace, the discus, and the conch-shell. At the back of his head there is an ornamental nimbus. Among numerous ornaments he is adorned with a garland of wild flowers which hangs down to his legs. His limbs are also measured in the large ten *tāla* system. He is also attended by two goddesses, Lakshmī (goddess of prosperity) and Bhūdevī (earth goddess), who are measured in the middle ten *tāla*.

Śiva, the third member of the Triad, is four-armed and is distinguished by a third eye in the middle of his forehead. Like Brahmā, he wears the matted hair of the ascetic. The figures of *Gaṅgā* (the river Ganges) and the crescent moon are inserted in his head-dress. On the left side of his neck there is the mark of the deadly poison *kālakūṭa*. His dress consists of a tiger-skin reaching down to the knees and a waist cloth. His complexion is red, (elsewhere stated to be white).

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Two of his hands are in the attitude of granting a boon and of conferring security. In the remaining two hands he holds an antelope and a tabor or hand-drum. His limbs are also measured in the large ten *tāla* system. He is accompanied by the goddess Pārvatī (mountain-maid) who keeps standing or seated on his left side. The consort is measured in the middle ten *tāla*.

The chapter closes with a brief reference to the pedestals for images which are described elsewhere, and with a direction that the particulars not mentioned here with regard to the carving of these idols should be supplied from tradition (*Sāstra*).

The next chapter (LII) deals with the so-called Phallus which is ordinarily understood to be an emblem of Śiva, the third member of the Triad. But in fact it is a symbol for all the three members of the Triad. Its bottom portion is called here the *Brahmabhāga* and is generally square in shape, the middle portion is called the *Vishṇu-bhāga* and is octagonal in shape, and the top portion is called the *Śiva-bhāga* and is round in shape. These shapes are interchangeable and the topmost point may be like a bud, leaf or umbrella. It also consists of another essential portion called *Piṭha* or pedestal upon which it stands.

The popularity of its worship throughout the country is indicated by the fact that there are more than thirty million such emblems, including *Viśvanātha* at Benares, *Somanātha* in Gujarat, *Mahākāla* at Ujjayinī, and the famous ones at Tanjore, Trichinopoly, Rameśvaram, etc. Architecturally they are classified under several types, such as *Śaiva, Pāśupata, Kālamukha, Mahāvrata, Vāma, Bhairava, Samakarṇa, Vardhamāna, Śivāṅka, Svastika*; *Jāti, Chhanda, Vikalpa, Abhāsa*; *Nāgara, Vesara, Drāviḍa*; the four self-revealed ones, namely, *Daivika, Mānusha, Gāṇava* and *Ārsha*; those for personal and public worship; those made singly and in a group; and those named as *Vajra* (diamond), *Suvarṇa* (golden), etc., according to the material of which they are made. All these are described at great length. Various alternative measures are prescribed for each of them; in some cases as many as thirty-six alternative heights are suggested.

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The following chapter (LIII) deals with the Altar (*Pīṭha*) which symbolically represents Satī (the chaste), the consort of Śiva. The well-known fifty-one *Pīṭha-sthāna* are the sacred spots spread over the whole country, where the parts of the body of Satī fell after she had been cut to pieces by the discus of Vishṇu as a result of her quarrel with the gods at a great sacrifice (festival) at her father's house wherefrom her husband was excluded in order to humiliate him.[1]

The sculptural details of altars are given under the following types : *Bhadrapīṭha, Śrībhadra, Śrīviśāla,* and *Upapīṭha* ; and also under *Nāgara, Vesara* and *Drāviḍa.*

The following female deities or goddesses are next described (in Chapter LIV) : Sarasvatī (goddess of learning), Lakshmī (goddess of prosperity), Mahī (the earth-goddess or mother country), Manaunmādinī (enchantress of mind, the goddess of love), Sāvitrī (consort of Brahmā), Durgā (consort of Śiva) and the seven mothers comprising Vārāhī, Kaumārī, Chāmuṇḍī, Bhairavī, Māhendrī, Vaishṇavī, and Brahmāṇī. The former are superior goddesses and are measured in the middle ten *tāla,* and the latter are inferior and measured in the nine *tāla.* The characteristic features, complexions, attributes, poses, ornaments, crowns, garments, etc., of every one of these are described in detail.[2] The chapter closes with a brief reference to the plumb-lines which are more fully treated in a later chapter.

The next chapter (LV) describes the Jain images. The opening lines give a detailed account of the various kinds of sculptural measurement. The linear measurement is divided into six kinds. *Māna* is the measurement of an image from the foot to the top of the head. *Pramāṇa* is the measurement of breadth. *Parimāṇa* is the measurement of girth or circumference. *Lambamāna* is the measurement along the plumb-lines. *Unmāna* is the measurement of thickness or

[1] In Persian architecture similar altars are the only relics to represent the temple which was not in vogue there (for details see the writer's article 'The Indo-Persian Architecture,' the *Calcutta Review,* 1930, February, pp. 163-179 ; March, pp. 373-379 ; April, pp. 22-35).

[2] A reference to the Index may supply a brief summary of the details.

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diameter. And *Upamāna* is the measurement of interspace such as that between the two feet of an image. Then the *ādimāna* (primary measurement) refers to the comparative measurement and is divided into nine kinds, as the height of an image is determined by comparing it with the breadth of the temple, with the height of the cella or sanctum, with the height of the temple-door, with the base, with the height of the worshipper, with the height of the riding animal (or with the principal idol in case of auxiliary deities), in *tāla* system, and in cubit. The cubit measure is sub-divided into smaller units such as the *aṅgula,* which admits of four varieties. *Berāṅgula* is the measurement taken by the finger-breadth of the main idol. *Mānāṅgula* refers to the ordinary absolute measurement which is equivalent to eight *yavas* (barley corns) or three-fourths of an inch. *Mātrāṅgula* refers to the measurement determined by the length of the digit and the width of the middle finger in the right hand of the master (worshipper). And *Deha-labdhāṅgula* or *dehāṅgula* refers to one of the equal parts (as in the *tāla* system) into which the whole length of an image is divided.

The Jain images which are measured in the large ten *tāla* have a purely human shape, carved in an erect or sitting posture, and may be stationary or movable. They are furnished with no robes or ornaments, but are placed on a throne decorated with the *makara* arch and the *kalpa* tree. On the chest the *śrivatsa* symbol is marked in gold. They are attended by Nārada and other sages, as well as by Yakshas, Vidyādharas, Siddhas, Nāgendras, Lokapālas, etc. The twenty-four *Tīrthaṅkaras* are also measured in the ten *tāla* system.

A short account of the Buddhist images is given in Chapter LVI. The Buddha image is measured in the large ten *tāla* and is thus of the superior type. He has a full face, a long nose, smiling eyes and elongated ears. His body is fleshy, his chest broad, his belly round, and his arms long. His complexion is white. He wears a yellow garment. He is furnished with the *ushṇisha* or protuberance of the skull, which is a peculiar mark of Buddha. Another Buddhistic mark is the *aśvattha* or ficus religiosa, which, along with the *kalpa* or mythic

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wonder-tree, is a characteristic feature of the thrones on which Buddhist figures are placed in an erect or sitting posture.

The images of the sages are described in the next chapter (LVII). They comprise the seven well-known patriarchs, namely Agastya, Kāśyapa, Bhṛigu, Vaśishṭha, Bhārgava, Viśvāmitra, and Bharadvāja. Agastya is bright blue in complexion, Kāśyapa yellow, Bhṛigu dark or black, Vaśishṭha red, Bhārgava brownish, Viśvāmitra red, and Bharadvāja yellow. Agastya is measured in the seven *tāla*, Kāśyapa and Bhṛigu in the eight *tāla*, and the rest in the nine *tāla*. They are represented in a purely human shape, being two-armed and two-eyed. They wear yellow garments and the sacred thread, and are distinguished by the matted hair of the ascetics. In their two hands they hold a staff and a book. Of Agastya it is stated that he is corpulent and hump-backed.

Chapter LVIII deals with the semi-divine beings and demons. They are classified under four main groups, namely Yakshas, Vidyādharas, Gandharvas, and Kinnaras, with Rakshasas and Nigrahas as two sub-classes of Yakshas. Rakshasas are evil spirits, while Nigrahas are supernatural beings of a benevolent or inoffensive disposition. Yakshas act as attendants to the gods. Vidyādharas are chowry-bearers of the gods and are a kind of fairy possessed of magical powers. Gandharvas are celestial choirs and are celebrated as musicians. Kinnaras are hybrid beings. Their legs are like those of an animal, the upper body is like that of a man, the face is like that of Garuḍa, and the arms are provided with wings. They hold a lute, possess the beautiful hue of a flower, and are adorned with a diadem and a red lotus. The colour of the Yakshas is dark blue and yellow, and that of the Vidyādharas dark red and yellow. The right legs of Yakshas are cross-shaped (*svastika*) and the left bent. In one hand they hold the chowries and the other is kept touching the ground. Yakshas are placed on a seat with plough-shaped legs stretched backward and forward, and the hands are kept resting on the knees and stretching towards the gate-house. Gandharvas are carved in a sitting or erect posture and are furnished with lutes, etc. All these have two arms and two

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eyes and are adorned with the *karaṇḍa* crown. Yakshas and Vidyādharas are measured in the nine *tāla*.

The next chapter (LIX) describes the devotees who are furnished with human features but possess superhuman measures. They are divided into four classes according to the four stages of spiritual advancement known as *Sālokya* (dwelling in the same world as the deity), *Sāmīpya* (dwelling in the vicinity of the deity), *Sārūpya* (being in close fellowship with the deity) and *Sāyujya* (being united with the deity). The images of the *Sālokya* class of devotees are measured in the large type of nine *tāla* system, those of the *Sāmīpya* class in the small type of ten *tāla*, those of the *Sārūpya* class in the middle type of ten *tāla*, and those of the *Sāyujya* class in the large type of ten *tāla*.

The riding animals of gods, of the Triad in particular, called *Vāhana* (conveyance) are described in the next four chapters. The sculptural details of the goose, who is the conveyance of Brahmā, are given in Chapter LX. It is white all over with red legs and a golden beak. It is measured in the two *tāla* system. The chapter closes with a statement that rows of geese should be beautifully carved or painted in the temples of gods and mansions of Brahmans and kings; they are figured on the entablature, architrave, finial, recess (nest), and neck of those buildings.

Chapter LXI opens with a lengthy discussion on the application of the rules for verification (*shaḍvarga*) of various alternative measures suggested in connection with the riding animals. Garuḍa, the conveyance of Vishṇu, who is the primary object of the chapter, is described in very great detail. He is a mythical being. Garuḍa is figured partly as a human creature and partly as a bird. He is provided with feathers, wings painted in five colours, and a beak; but, on the other hand, the description refers to his arms, ears, and hair. He wears various ornaments including the *karaṇḍa* diadem and is gorgeously painted in a great variety of colours. He assumes a terrific appearance. He is figured in an erect or sitting posture and as meditating on Vishṇu with joined palms. His limbs are measured in the nine *tāla* system.

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The next chapter (LXII) describes the bull Nandin who is the animal of Śiva. Its image, which may be either recumbent or erect, is placed facing the Śiva temple on a pedestal, either inside the shrine, or in a pavilion in front of the temple, or at the door. He is white in colour, but his four legs, hoofs and ears are red. He is covered with a tiger-skin and wears garlands at the neck, and foot-rings or anklets. He is not measured in any *tāla* system, but various absolute and comparative measures have been prescribed. The bull is made, solid or hollow, of metals, stone, wood, glass, gems, stucco, baked clay, and grit.

The lion is the next riding animal described (in Chapter LXIII). The Mountain-Maid Pārvatī rides on him. He is made in an erect, sitting, or recumbent posture. His four legs are like those of the tiger. His colour is white but his mane should be red. His nails and teeth are crescent-shaped. He, also, is not measured in any *tāla* system. His tail is generally equal to his height.

Chapter LXIV proposes to give a general description of all images particularly of the attendant deities of the Vishṇu temple. But it actually supplies a general resumé of all kinds of architectural and sculptural measures and of the rules concerning the verification of alternative measures, which have been repeatedly referred to both in the architectural and sculptural sections. The comparative measurement is distinguished into twelve kinds, as it is compared with the Phallus, the main Vishṇu image, the width of the sanctum, the breadth of the main temple, the door, the rafter (*vaṁśa*), the basement, and the pillar, as also in cubit, in the *tāla* system, in comparison with the worshipper, and in *aṅgula* of which four varieties have also been mentioned in Chapter LV. The various sub-divisions of each of these measures, illustrations of their application, and the effect of adopting a particular system are discussed in great detail.

Chapters LXV and LXVI supply minutest details of the large and the middle types of the ten *tāla* system. Under the former the measure of one hundred and fifty-four parts of the body is given. The former is employed in measuring superior gods and the latter for goddesses,

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The details of other *tāla* measures have been already given in various chapters. Incidentally, Chapter LXVI supplies a general clue to the exact features of the various important limbs. The face is stated to be oval or shaped like the egg of a hen. The eye-brows should be shaped like a bow, the eyes like a fish, the nose like a sesame flower, etc. the nostrils like a bean, etc.

The next chapter (LXVII) deals with the plumb-lines which are drawn through the body of an image in order to find out accurately the perpendicular and the horizontal measurement of and the distance between different parts of the body. The construction of the boards between which the image is to be placed and of the plummet is described in detail. As many as eleven perpendicular plumb-lines are referred to. The subject has become all the more complicated as the three postures, the erect, sitting, and recumbent, and the four poses, namely, the equipoise, slight flexion, three flexions and excessive flexions, are also taken into consideration in ascertaining the measures along and between the eleven plumb-lines. Thus the variation of the measures of a figure is carefully considered in each case.

The next chapter (LXVIII) deals with the casting of images in wax. The chapter opens with an enumeration of the names of phalli and ascetics, as well as of architects. So far as the casting is concerned all kinds of images, temporary or permanent, stationary or movable, are moulded in wax. The process slightly varies according to the materials of which an idol is made. Generally a half of the image is covered with a thin copper leaf or melted iron, and the wax is laid two or three *aṅgulas* deep ; and the other half is covered with earth. The metallic portion is washed in water. Thus in casting images in metals wax is melted and poured out of the mould and defects are removed with cloth. Metal images are first made of wax and coated with earth ; gold and other metals are purified and cast into the mould. For images made of earth rods of wood or metal are inserted in them.

Chapter LXIX deals with the defects of the limbs. It is laid down that no part of a building should be larger or smaller than what is prescribed. The evil consequences of a defective construction threaten

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the king, the kingdom, the master, and the maker. The penalties for defective construction are enumerated with reference to architectural objects, but nothing is specifically stated regarding the sculptural objects.

The concluding chapter (LXX) deals with the chiselling of the eyes of an image, which is the final function. The purification and setting of precious stones in the images and phalli are also mentioned. The chapter closes with a statement that this science of architecture and sculpture was originally described by Brahmā, Indra, and all other gods, and that the text has been compiled on the basis of these authorities.

This brief outline of the chapters, if read with reference to the Index, where under each term all necessary information has been gathered together, with great labour, may supply the gist of the summary without which an average reader might find it rather difficult to form a complete and connected idea by a single reading of the text or the translation.

Relation with other works

The other existing texts, mostly in manuscripts, numbering some three hundred, of which an account has been given in Appendix I of the writer's *Dictionary of Hindu Architecture*, deal with some of those subjects outlined in the preceding section practically in the same manner as in the *Mānasāra*. Some of these texts have been compared rather elaborately in the writer's *Indian Architecture* and the discussion need not be repeated here. It will be perhaps enough to refer to the conclusions only.

The *Mayamata-śilpaśāstra* attributed to one Gannamāchārya is the most well-known text next to the *Mānasāra*. It has been shown that in respect of the titles of chapters, their sequence and contents the *Mayamata* and the *Mānasāra* are identical. A portion of the manuscript of the *Mayamata* contains the title *Mānasāra* and this fact has led to the assumption that the *Mayamata* is based on and is an abridgement of the *Mānasāra*. The fact that one Mayamata is

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included in the list of thirty-two authorities mentioned in the *Mānasāra* itself does not present much difficulty in accepting this view, because Mayamata like Manu or Mānasāra is apparently a generic name and the treatise catalogued under the title *Mayamata-śilpa-śāstra* need not necessarily be ascribed to the authority mentioned in the *Mānasāra*.

The *Aṁśumadbheda* of Kāśyapa contains eighty-six chapters of which forty-seven are devoted to sculpture and are similar to the first fifty chapters of the *Mānasāra*. The remaining thirty-nine chapters of the former appear to be an elaboration of the remaining twenty chapters of the latter.

The treatise which is intended by its authors to be the most authentic is naturally the one attributed to Viśvakarman (the creator of the universe), the heavenly architect. There appear, however, to have been more than one treatise bearing the name of Viśvakarman : one being called *Viśvakarma-prakāśa*, or *Viśvakarma-vāstuśāstra*, and another *Viśvakarmīya-śilpa* or *Viśvakarmīya-śilpasāstra*. The first deals in thirteen chapters with directions on the building of houses, the making of roads, tanks, etc., similar to those given in the *Mānasāra*. The second deals with sculptural objects in a similar manner, but in an abridged form, and appears to have been influenced by the *Mānasāra* through the *Mayamata*.

Treatises like the *Śilpa-śāstra* of Maṇḍana and the *Samarāṅgaṇa-Sūtradhāra* are comparatively modern texts, some of which treat the subjects of their requirement in an abridged form while others in an enlarged form. Although they do not expressly say so, yet there is convincing reason to believe that they are but compilations. One such text is actually named *Saṁgraha* (compilation) and expressly acknowledges its indebtedness to twenty-one authorities including the *Mānasāra*, the *Mayamata* and others. It specifically states that such and such chapters have been compiled from such and such authorities.

Thus it has been concluded in the writer's *Indian Architecture* that "most of the architectural treatises, whether or not

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ascribed to an author, historical or mythical, are but compilations. Some of these have actually acknowledged the sources drawn upon, while others have not." The *Mānasāra* itself is a compilation but it is the standard work on the subject because it is the most complete, scientific and probably the oldest extant record. It has thus influenced all others directly or indirectly.[1]

The treatment of architectural and sculptural objects is of historical character rather than of practical nature in the non-architectural treatises. Thus in the Vedas, the Buddhist scripture, the epics, the classical poetical works, the astronomical, medical and historical treatises and in the Purāṇas and the Āgamas the treatment of the subject varies from mere mention of certain architectural terms to the elaborate descriptions of town-planning, temples, palaces, residential houses, classification, etc., of pillars and their mouldings. But nowhere is to be found actual measurement and such other constructional details.

In regard to the Vedic literature, after examining the frequent references it has been shewn in the writer's *Indian Architecture* that the Vedic Indians "were not ignorant of stone forts, walled cities, stone houses, carved stones, and brick edifices."

The canonical books of the Buddhists more elaborately refer to the arrangement of villages, towns, forts, buildings of various types and articles of furniture. Thus in the *Vinaya* texts, *Mahāvagga* (I 30, 4), *Chullavagga* (VI 1, 2), the Blessed one (Buddha) himself says "I allow you O Bhikkhus, five kinds of abodes—*Vihāra* (monastery), *Ardha-yoga* (bungalow), *Prāsāda* (storied mansion), *harmya* (palace), and *Guhā* (cave temples)." Interesting details follow. Houses were built comprising dwelling-rooms, retiring rooms, store-rooms, service-halls, fire places, closets and cloisters, wells, bath rooms and a bathing place for hot sitting baths, kitchens, etc. Articles of furniture include bedsteads, couches covered with canopies, chairs of various kinds, sofa, arm-chair, cushioned chair, etc., carpets, rugs,

[1] See the writer's *Indian Architecture*, pages 109, 89–132.

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floor cloth, curtains, pillows of various sizes, shapes and materials, mosquito curtains, handkerchiefs, and not even excluding the spitoon.[1]

The Epics, the *Rāmāyaṇa* and the *Mahābhārata*, furnish copious descriptions, but no constructional details, of cities, storied buildings, balconies, porticos, arches, enclosing walls, flights of stone masonry, steps for tanks, and a variety of other structures.

The foregoing works, namely the Vedic literature, the Buddhistic scripture, and the Epics have obviously supplied the basis of Mānasāra's compilation which has been certainly put into a scientific form by the personal observation and actual measurements of the then objects by its author. Thus standardised, the *Mānasāra* has influenced directly or indirectly the subsequent works where the subjects were casually treated.

The *Purāṇas* and the *Āgamas* are huge compilations gathered together from various sources dealing with heterogenous subjects including architecture and sculpture. Although casual references are met with in all the *Purāṇas*, nine of them have treated the subject more systematically, and have materially contributed to the later *Śilpa-śāstra* texts and other works. The *Matsya-purāṇa*, for instance, has eight comprehensive chapters dealing in great detail with architecture and sculpture. In one of these chapters accounts are given of eighteen ancient architects. One chapter is devoted to the columns, which are divided into five classes as in the western system, and their component parts into eight mouldings exactly like those of the Græco-Roman orders. Buildings are classified under three heads and twenty types, of which plans, general measures, pavilions, halls, storeys, steeples and cupolas are referred to. Building materials are discussed in a separate chapter. Three chapters are devoted to the description of images, which includes a reference to the *tālamāna* also. In the other two chapters the Phalli and Altars are described.[2]

The *Skanda-purāṇa* has devoted three chapters to the subject. One of these refers to the laying out of a large city. In another

[1] For details see the writer's *Indian Architecture*, pp. 9-16.

[2] *Ibid.*, pp. 17, 114-6.

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mention is made of the construction of a golden hall and three chariots and the names of the architects. In another chapter the details of a special pavilion for the wedding of a royal princess are described.

One of the four chapters of the *Garuḍa-purāṇa*, devoted to the subject of architecture and sculpture, deals systematically with all the three classes of the buildings, namely, residential, military, and religious, as well as the laying out of pleasure-gardens and pavilions therein. In one chapter are described the dwelling-houses, forts and fortified towns, temples and monasteries together with garden-houses. Another deals exclusively with religious buildings. Two others are devoted to sculpture, one dealing with rules relating to the construction of an image, and the other with installation of images in temples.

There are sixteen chapters in the *Agni-purāṇa*, three dealing with architecture and thirteen with sculpture. One chapter deals with town-planning, two with temples and residential buildings. Of the remaining thirteen chapters one is devoted to the description of the sun-god, one to the ten incarnations of Vishṇu, two others also to Vishṇu under the name of Vāsudeva, one to the guardian angel of the house, one to the goddess of prosperity, two to the female deities in general, four to the Phallus and Altars, and the remaining one to the stone god (Śālagrāma) and others.

The *Nārada-purāṇa* practically completes the *Purāṇas'* contribution to architecture by describing in a single chapter the construction of pools, wells and tanks, as well as temples. The *Brahmāṇḍa-purāṇa* also describes in a single chapter the construction of temples and residential buildings. The *Vāyu-purāṇa* also in a single chapter describes the construction of various temples upon mountain-tops many of which still exist on several peaks of the Himalaya and the Vindhya ranges.

Of the four chapters of the *Bhavishya-purāṇa* devoted to the subject, three deal with sculpture and one with architecture proper comprising the construction of temples. The most striking feature of this *Purāṇa* is that the number, names and other details of the

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buildings described in it are identical with the twenty types found in the *Matsya-purāṇa* and in the *Bṛihat-saṁhitā* of Varahamihira.[1]

The *Bṛihat-saṁhitā*, usually classed under astronomical works, is but a semi-*Purāṇa*, dealing as it does, with heterogenous subjects like the *Purāṇas* themselves. In this treatise there are five chapters wherein both architecture and sculpture are treated with a master hand. The chapters open with a definition of architecture and the author goes on describing briefly, but succinctly and to the point, the suitable building-sites, testing of soil, general plan, comparative measures of storeys and doors, and carvings thereon, and other important parts of a building. Twenty types of buildings referred to above are next described. Preparation of cement and paste is described in a separate chapter. The house-furniture, including bedsteads, couches and seats, are described in another chapter. In a single chapter important sculptural matters and images are described. By a detailed comparison it has been shewn that the architectural and sculptural portions of this treatise must have been based on the *Mānasarā*.[2]

The *Āgamas* like the *Purāṇas* are encyclopaedic works dealing with heterogenous subjects, the ultimate object in both cases being the worship of the Triad. The twenty-eight chief *Āgamas*, like the eighteen great *Purāṇas* deal incidentally with architectural and sculptural objects. But the contribution of the former is much more extensive and valuable to these subjects.

Some of the *Āgamas* to all intents and purposes are but architectural treatises. The *Kāmikāgama*, for instance, devotes sixty chapters out of a total of seventy-five to architecture and sculpture, and its treatment of the subjects can hardly be surpassed by that of an ordinary architectural treatise. Just like a *Śilpa-śāstra*, it begins systematically with the preliminary matters, such as the testing and preparation of soil, selection of sites, scheme of measurement, finding out of the cardinal points by means of gnomons for the orientation of

[1] For references and details see the writer's *Hindu Architecture*, pp. 19-22, 114-120.
[2] *Ibid.*, pp. 22, 117-118, 161-164.

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buildings, and the site plans. Buildings proper are described under twenty types, just as in the *Matsya* and *Bhavishya Purāṇas* and the *Bṛihat-saṁhitā*. But unlike the *Purāṇas*, there is in the *Kāmikāgama* a discussion of architectural matters under certain highly technical classifications, such as the styles Nāgara, Vesara and Dr.viḍa; shapes, masculine, feminine and neuter; pure, mixed and amalgamated as based on one, two or more materials; Saṁchita, Asaṁchita and Apasṁchita otherwise known as Sthānaka, Āsana and Śayana, which, in case of temples, depend on the erect, sitting, and reclining postures of the image. Another very technical matter referred to is the *āyādi* formula used in selecting the right proportions. By an elaborate comparison it has been shewn that this and the other *Āgamas* must have been based for these subjects on the *Mānasāra*.[1]

There are thirty-seven chapters in the *Karaṇāgama* which deals with architecture and sculpture exhaustively. It makes a distinct addition to the *Āgamas*' contribution to the later *Śilpa-śāstra* texts. It contributes two valuable chapters dealing in detail with the nine and ten *tāla* systems. This also closely follows the *Mānasāra*.[2]

The *Śuprabhedāgama* has devoted only fifteen chapters to architecture and sculpture. But its uniqueness consists in the fact that it has quite successfully summarised all important matters in a comparatively small space, and in respect of brevity, explicitness and precision it surpasses even the *Bṛihat-saṁhitā* of Varāhamihira. Its similarities with the *Mānasāra* has shewn that it must have drawn upon a text on *Śilpa-śāstra*.[3]

So far as the lists of buildings are concerned it will be noticed that the *Mānasāra* contains in twelve classes ninety-eight types of buildings, the *Agni-purāṇa* has in five classes forty-five types, the *Garuḍa-purāṇa* also has in the same five classes the same forty-five types, the *Matsya-purāṇa* has in three divisions twenty types, the *Bhavishya-purāṇa* and the *Bṛihat-saṁhitā* have left out the broader

[1] See the writer's *Indian Architecture*, pp. 23-28, 118-133.
[2] *Ibid.*, pp. 26-27, 119-133.
[3] *Ibid.*, pp. 27-28, 110, 113, 117-119.

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divisions but retained the same twenty types as in the *Matsya-purāṇa*. The *Kāmikāgama* also contains in three divisions of various kinds twenty types, and the *Suprabhedāgama* having left out all the minor divisions refers to the three styles (Nāgara, Vesara and Drāviḍa) which comprise ten types of buildings. It will be further noticed that the various broader divisions, such as *Śuddha* (of one material) *Saṁchita*, *Sthānaka*, *Jāti*, *Puṁliṅga* (masculine), etc., of the *Mānasāra* are repeated in the same terms and in the same senses in the *Āgamas*. The most important division into the three styles is also preserved intact in the latter works. These are purely architectural classifications, and they are not taken into consideration in the non-architectural treatises like the *Purāṇas* and the *Bṛihat-saṁhitā*. Even the broadest division into storeys under which the *Mānasāra* describes the buildings in twelve or thirteen chapters has lost its prominence in the latter works.

After the styles, columns or orders are the most important matter for consideration. Like the five Græco-Roman orders, Doric, Ionic, Corinthian, Tuscan, and Composite, columns in ancient India also were divided into five main orders or classes. In the *Mānasāra* they are called Brahmakānta, Vishṇukānta, Rudrakānta, Śivakānta, and Skandakānta. These divisions are based on the general shapes. With respect to dimensions and ornaments the five orders are called Chitrakarṇa, Padmakānta, Chitra-skambha, Pālikā-stambha, and Kumbha-stambha.

Among the *Purāṇas* only the *Matsya* refers to the subject, wherein as well as in the *Bṛihat-saṁhitā* the five orders are called Ruchaka, Vajra, Dvivajra, Praliṇaka, and Vṛitta. Of the *Āgamas*, the *Suprabhedāgama* contains the essential details, according to which the five orders are Śrīkara, Chandrakānta, Saumukhya, Priyadarśana, and Śubhaṅkarī ; the last is stated to be the Indian Composite order, being a compound of Saumukhya and Priyadarśana, just as the Græco-Roman composite order is a compound of Corinthian and Ionic.

The component parts of the column, which are common to all orders, vary in number. Thus in the *Mānasāra*, which of almost all the

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treatises deals separately with the pedestal, the base, and the entablature, mention is made in connection with the pillar proper or the shaft of five mouldings. The *Suprabhedāgama* describes two sets of seven mouldings. The increasing number of mouldings reached the significant figure of eight in the *Matsya-purāṇa*, the *Bṛihat-saṁhitā* and the *Kiraṇa-tantra*, and bears the very same eight names. It will be noticed that the component parts of the Græco-Roman orders are also eight in number, most of which are, however, given more than one name. It will be further noticed that mention is made in the *Mānasāra* in connection with the pedestal, the base and the entablature, of some forty-seven mouldings, and that such comparative measure of the pedestal, the base, and the entablature and such elaborate classification and description of them as are given in the *Mānasāra* are to be found neither in the *Purāṇas* nor in the *Āgamas*. Thus in respect of the names of the columns, the number of their subservient parts called mouldings, also the pedestal, the base and the entablature, as well as their comparative measure, the *Mānasāra* will occupy the first place among the avowedly architectural treatises and the architectural portions of the *Purāṇas* and the *Āgamas*.

Of the other non-architectural works the *Arthāśāstra* of Kauṭilya devotes some seven chapters to the subject, containing interesting descriptions of forts, fortified cities, town-planning, and military and residential buildings. The *Śukra-nīti* deals with both architectural and sculptural objects, wherein are also found certain rules and structural details along with descriptions of forts and fortified cities, of temples and other kinds of buildings, and of various kinds of images including a reference to the seven *tāla* measure and the direction regarding the repair of broken images.[2]

In the *Harsha-charita* of Bāṇa it is stated that 'the palace had besides the harem always more than three courtyards, the outer one being for people and for state reception, the next inner one for chiefs and nobles and the third one for intimate persons only. The

[1] For details see the writer's *Indian Architecture*, pp. 125-129, 121-124, 89-120.

[2] *Ibid.*, pp. 29-30.

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palaces were stately buildings. The columns and walls were ornamented with gold and precious stones. There was usually a several storeyed building with inner gardens of flower-beds and large fruit trees.'[1] The *Rājataraṅgiṇī* of Kalhana refers frequently to architectural objects like castles, monumental buildings and monasteries.[1]

The *Gārga-saṁhitā* deals with a large number of purely architectural subjects, namely courts, compounds, compartments, rooms, and dimensions and situation of doors in houses. The *Sūrya-siddhānta*, the *Siddhānta-śiromaṇi* and the *Lilāvati* deal in detail with a technical matter, namely the gnomons which are used for finding out cardinal points in connection with the orientation of buildings.[2]

The poetical works of Kālidāsa, Bhavabhuti and others refer occasionally to architectural matters. In the *Vikramorvaśī*, for instance, mention is made of a flight of stairs made like the waves of the Ganges. The *Uttara-Rāmacharita* refers to the preparation of cement, and to Nala, son of the heavenly architect Visvakarman, who built the bridge joining India with Ceylon. The *Mṛichchhakaṭika* describes in detail the gatehouses, the courts and compounds of the heroine's palace, and refers to many other architectural matters.[2]

The *Nirukta* of Yāska refers to masonry houses. In the grammar of Pāṇini reference is made to edifices, pillars, brick, sculpture, etc. In the *Amarakosha* and other lexicons lists of several architectural terms are met with.[2]

These minor non-architectural treatises have certainly drawn upon the standard architectural treatises, the *Purāṇas*, the *Āgamas*, the Epics, the Buddhist scripture or even upon the Vedic literature.

In the light of all these facts, merely to deal with the question in its aspects as they concern the *Mānasāra*, it seems impossible to resist the conclusion that there was a relation of indebtedness between the *Mānasāra* and the other works, both architectural and non-architectural. Except in a few instances, it is, however, difficult to

[1] *Indian Architecture*, pp. 30-31. [2] *Ibid.*, pp. 32-34.

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state definitely that the *Mānasāra* is the debtor or creditor to this or that work in respect of this or that matter.

Similar difficulties arise in regard to the exact relation between the architectural work of the Roman architect Vitruvius and the *Mānasāra*, although scholars and critics have admitted the writer's conclusion, after an elaborate examination and minute comparison, that there exist striking similarities between these two standard works.[1]

Age of compilation

So far as the date of the *Mānasāra* is concerned the indications to the period discussed at great length elsewhere[2] must await final decision till the question of the identification of the author and the treatise have been satisfactorily settled. Up till now no tangible argument or proof has been found as to the possibility of the treatise being the compilation of a number of authors, instead of a single individual, who might have added to it from time to time until it has grown up to its present complete form and thus spreading its time to a long period. Nor has it been possible to say definitely what the title was intended to imply. In the treatise itself *Mānasāra* has been used in three distinct senses,[3] namely, an individual author of an unknown parentage and time ; a class of sage-artists who deal with the essence of measurement which is the derivative meaning of the term *māna-sāra* ; and, lastly, a treatise containing methods and principles, as well as rules and regulations and illustrative examples of all the principal architectural and sculptural objects for the construction of which the essence of measurement is required.

The external evidence referring to the treatise and the author is also very meagre. The avowedly architectural compilations like the *Saṁgraha*[4] referred to above, which have expressly quoted from

[1] For details see the writer's *Indian Architecture*, pp. 134–159, and Opinions and Reviews quoted at the end of this volume.

[2] See the writer's *Indian Architecture*, pp. 160–198.

[3] See the Preface to the above, pp. ii–iv.

[4] See this preface, pp. xlvii—xlviii.

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the *Mānasāra*, are also of uncertain authors and dates. The reference of the *Agni-purāṇa*, of which also the date of compilation is not quite certain, is very ambiguous. It is stated therein that "above that should be raised a platform together with its neck *either* for the discharge of refuse *or* according to the *Mānasāra*" (not *Mānasāra*.)[1] A similarly ambiguous reference is made to *Mānasarpa*, not *Mānasāra*, as an architect, in two late inscriptions.[2] The only other external reference to the name of Mānasāra in a clearer term is in the *Daśa-Kumāra-charita* of Daṇḍin of probably the sixth century A.D. Therein Mānasāra is repeatedly mentioned in unmistakable terms as the King of Mālava (Malwa) with whom was engaged in war King Rājahaṁsa of Magadha (Patna); the latter was the father of Rāja-vāhana, the chief of the ten princes or Daśa-Kumāra after whom the fiction is named.[3]

This King Mānasāra is stated to be the father of one of the ten princes, who is, however, not even the principal character of the fiction. There are no doubt historical facts concealed in a fictitious work. But it is not easy to sift facts from fiction. Historical facts extricated from the complexities of such a fiction can hardly supply the necessary clue to the solution of the problem. Although some vague conclusion has been inferred from the circumstantial evidence about the period in which Daṇḍin, the author of the *Daśa-Kumāra-charita*, lived, no such vague idea even is available about the period or periods in which the more or less imaginary incidents described in the fiction might have taken place. Besides, it must be noted that King Mānasāra was not the hero nor even one of the chief characters of the fiction. This Mānasāra, the father of one of the ten princes who are the principal characters, is stated to have been engaged in a war with King Rājahaṁsa, the father of the chief prince, that is all. There is in the fiction practically no direct or indirect reference made as to the nature of interest

[1] See the writer's *Indian Architecture*, p. 169.
[2] *Ibid.*, pp. 4, note 2; 130, note 5; 171, note 2; 176, note 1.
[3] *Ibid.*, pp. 170–171, 197–198.

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which King Mānasāra might have been in the habit of taking in literary or artistic matters; it must, however, be admitted that there was no real occasion for such a reference, but the author, Daṇḍin, himself is held, in his recently discovered works, the *Avanti-Sundarī-Kathā* in prose and the *Avanti-Sundarī-Kathāsāra* in verse, to be well learned in architecture of royal and divine structure. In this connection another incident must be taken into consideration. Neither in the three styles mentioned in the treatise *Mānasāra* under three geographical names (Nāgara or northern, Vesara or eastern, and Drāviḍa or southern), nor in the ten types of the most gorgeous buildings bearing again geographical names and provincial divisions (Pāñchāla, Drāviḍa Madhyakānta, Kāliṅga, Virāṭa, Kerala, Vaṁśaka, Māgadha, Janaka, and Sphurjaka)[1] is included Mālava, which was presumably the capital city and provincial kingdom of King Mānasāra of the fiction. In the circumstances it would be doubly unwarranted to take any decision as to the possibility or otherwise of King Mānasāra's direct patronage or indirect instrumentality in the production of the standard treatise on architecture which, as its title would seemingly indicate, might have been named after him.

Those who are, however, inclined to connect the treatise *Mānasāra* with this King of Malwa, would assign the treatise to the seventh century, because the author of the fiction, Daṇḍin, was a contemporary of another author Bhāravi, who is mentioned in an inscription of A.D. 634 and also of Harsha of Kanauj who reigned from A.D. 606–648.

On the other hand, in view of the several facts discussed at great length in the writer's *Indian Architecture*, the reader may be inclined to consider more seriously the other items of evidence which are undoubtedly more authenticated and substantial, though circumstantial, including those regarding the connection of the *Mānasāra* with the *Matsya-purāṇa* (probably of A.D. 450) and the *Bṛihat-saṁhitā* (probably of A.D. 550).

Lastly, those who have admitted the striking similarities between the treatise of Vitruvius (of about 25 B.C.) and the *Mānasāra* will

[1] For the provinces implied by these see the writer's *Indian Architecture*, pp. 173–175.

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have to await the missing link in order to connect these two standard treatises. It is, however, possible to think that instead of any one being directly influenced by the other, both might have drawn upon a common source, namely some unknown work or works, or some floating traditions. In the event of a direct relation being established, the date of the *Mānasāra* may be a few centuries earlier or later than Vitruvius whose treatise was probably composed twenty-five years before the Christian era.

The writer, however, takes the liberty to conclude this preface by reiterating the fact that this is, like the medical works, the most practical of all Sanskrit treatises, and with the hope that a trial may be given to its methods and principles, its rules and regulations, because the foreign imitation in architecture for a millennium has proved more or less unsuccessful and uneconomical.

P. K. ACHARYA.

UNIVERSITY OF ALLAHABAD.

February 6, 1933.

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INDIAN ARCHITECTURE ACCORDING TO MĀNASĀRA-ŚILPA-ŚĀSTRA

AND

A DICTIONARY OF HINDU ARCHITECTURE

Published 1927

OPINIONS AND REVIEWS

EXTRACTS

Professor A. B. Keith, D.C.L., D.Litt.—Of auxiliary sciences architecture has at last received expert treatment from Professor Prasanna Kumar Acharya in his *Dictionary of Hindu Architecture* and *Indian Architecture* based on a new text and rendering of the *Mānasāra*, for which the period of A.D. 500-700 is suggested. Striking similarities between the prescriptions of the Mānasāra and Vitruvius are unquestionably established.

(*History of Sanskrit Literature*, 1928, Preface, p. XX.)

E. B. Havell, Esq.—Let me congratulate you on the results of your monumental researches by which you have contributed so much valuable data to the study of this great subject. All students of Indian Architecture are deeply indebted to you . . . . I have read enough to appreciate your very thorough treatment of the subject."

Dr. Abanindra Nath Tagore, D.Litt, C.I.E.—There are people who assume the rôle of critics of Art without having previously read a single treatise on Art. Moreover, they consider themselves to be authorities on the subject of Art although they may not have acquired the least practical skill in it.

There are enough of such people who talk a good deal on matters connected with Indian Art. They have continued to disseminate both within as well as outside India, a thoroughly inaccurate account of our Indian Art being influenced by their own individual notions.

There are others who are keenly anxious to acquire a true knowledge of Art and pursue their subject with a heart full of enthusiasm, by making a study of paintings, images, treatises on art and the history of the land. Our young friend Professor Prasanna Kumar Acharya belongs to the latter category. The two big volumes which he has published after infinite pains are in the nature of an encyclopædia embracing all the existing treatises on Indian Art. He has herein presented before us all the information that so long lay hidden and scattered all over the world.

There is a proverb "What is not contained in the *Mahābhārata* is not to be found anywhere." These two books may, on that analogy, be appropriately called the *Mahābhārata* of the literature on Indian Art, for, in them we find all that there is to know about Indian Art.

I may safely assert that these two volumes are just those that are fit to give a correct account of Indian Art to the world at large. Moreover, this much is certain that no two books of such magnitude and such merit as these, namely *Indian Architecture* and *Dictionary of Hindu Architecture* have ever been published either in India or elsewhere on the subject of Indian Art, after such intensive study and infinite pains. As they are written in English it can be expected that a true knowledge of our Indian Art will now be conveyed to the four corners of the world.

Before one can acquire a thorough knowledge of Indian Art it is essential to make an acquaintance with the ancient books on the subject. Hitherto it has been extremely difficult to be able to read all the connected literature that is to be found in libraries whether in India or outside. Everyone of us does not know the language in which the treatises are written. Moreover, most of the original texts are preserved in distant lands. In the circumstances, a volume of this nature, written in English and containing as perfect a compendium as is possible, of all the existing treatises on Art, came to be a necessity, not only for us but for foreign artists as well. It really makes me feel proud that this stupendous task has been accomplished by our young friend, the author.

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I cannot adequately express the extent to which I shall be able to make use of these two books and the profit which my pupils will derive from them. It is on all these grounds that I feel thankful to the author and wish an extensive circulation of his books.

We are expecting a few more such comprehensive volumes from the author on the subject of Indian Art written in the same beautiful style and including sketches of temples and other buildings, etc., in various parts. May the Goddess of Art be his guide in this great venture.

(Translated from *Pravasi*, April, 1928, by B. N. Lahiri, Esq., M.A., I.P.)

Mahamahopadyaya Pandit Ganganatha Jha, M.A., D. Litt., LL.D., Vice-Chancellor, Allahabad University.—These two books are the fruit of Dr. Acharya's labour extending over several years and the learned Doctor deserves congratulations on having completed and—what is more—seeing through the Press, this monument of his industry and scholarship. The ideal that he set before himself is neatly expressed by the sentence appearing as a motto on the opening page—"What the learned world demand of us in India is to be quite certain of our data, to place the monumental record before them exactly as it now exists, and to interpret it faithfully and literally." The doctor has acted up to this ideal. There are many of us who have collected and presented before the scholars important data, but very few of us have succeded in retaining the balance of mind needed for interpreting the data "faithfully and literally"; and Dr. Acharya appears to have been one of these few.

The *Dictionary* is a book which is so well done that it appears to be no exaggeration to say that for many decades, it cannot be improved upon, unless, of course, the South reveals to us more hidden treasures. If there is anything to object to, it is the title of the book, which does less than justice to it; "Encyclopædia" would be a fitter title. The term "Dictionary" is associated in our minds with word-meanings; while Dr. Acharya's work is very much more than "word meaning." Each term is followed by its meanings, mostly technical, an exhaustive account of the subject, and references to standard works of a wide range of literature. Thus, it will be seen, the work deserves a better title than "Dictionary." In fact, Dr. Acharya himself suggested to the London University the compiling of "An Encyclopædia of Hindu Architecture," and it appears to have been a mere freak of fortune that when the University decided to entrust the learned Doctor with the work of compiling, they chose the term "Dictionary"; they appear to have been led to do this by the nature of the usual run of work done by modern scholars who in many cases have the unhappy knack of "shirking work"; but in being led away by this prejudice, the University were unfair to their *alumnus*, who has, by this work, more than justified the title that he had himself suggested.

The *Dictionary* is based mainly upon the second work mentioned above. I have had occasion to deal with the *Mānasāra* myself on one or two occasions, and I know how hopelessly corrupt the available manuscripts of the work are; and on more than one occasion, I have had to give up the task as hopeless. As Dr. Acharya remarks, it is a text which is written in five different scripts, possesses eleven badly preserved manuscripts, has undergone five recensions and comprises more than 10,000 lines of a language rightly remarked by Dr. Buhler as the "most barbaric Sanskrit." To the "barbarism" of the Sanskrit of *Mānasāra*, I can bear personal testimony. I remember that when, about fifteen years ago, I was asked to make sense out of a few extracts from the work, I had to give up the task in disgust. Dr. Acharya deserves to be congratulated, therefore, for having succeeded not only in making some sort of sense out of the "barbaric Sanskrit," but evolving out of it a readable text and thereby undertaking and completing a work that deserves to be accepted as a standard treatise on Ancient Indian Architecture and to be placed on the shelves of every decent library in the country.

The general reader will be specially thankful for the second smaller volume, which supplies full information on the main principles of Hindu Architecture. It is complete in itself, and should be useful to all such students as may not have the time or the inclination to take up the more voluminous *Dictionary*.

It is a matter of special gratification to us of the Allahabad University that we have at the head of our Sanskrit Department a scholar capable of doing work which, as a monument of industry and patience, compares favourably with the best of that class of scholarly work which has hitherto been regarded as "German."

(*Indian Review*, March, 1928.)

Professor F. W. Thomas, C.I.E., M. A., Ph. D.—"The immense labour which you have undergone and your devotion to a literature so obscure and difficult will receive their due recognition. I admire your courage and perseverance and your independence in working in a field where you could not expect much assistance from others (except in so far as the materials exist in published books). You are now certainly better acquainted with the subject of Indian architecture in the literary side than any other scholar, and no doubt you will often be consulted as an authority on the subject. I hope that the *Dictionary* will become a recognized work of reference as it deserves to do."

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Sir Claude de la Fosse, C.I.E., M.A., D. Litt., once D. P. I. and the first Vice-Chancellor of reconstructed Allahabad University.—"The patience, the labour and the scholarship which you have devoted to these studies through so many years of your life are at length rewarded by the publication of works of permanent value to scholars and archaeologists."

K. N. Dikshit, Esq., M.A., Deputy Director General of Archaeology.—"Your recent publication, the *Dictionary of Hindu Architecture*, is really a monumental work, the value of which can hardly be exaggerated. I have no doubt that Indologists all over the world will acknowledge their indebtedness to you for placing in their hands such a comprehensive study of the elements of Hindu architecture."

Professor Dr. Sten Konow, Editor, "Acta Orientalia," Oslo, Norway.—"Many thanks for kindly sending me your two volumes. You are opening up a new branch of research, and the world of scholars will be thankful to you."

O. C. Gangoly, Esq., Editor, "Rupam."—"We have received your two books for review and I hasten to congratulate you on your remarkable and scholarly treatises which will remove one of the crying needs of the study of Indian Art."

Dr. Prasanna Kumar Acharya, who is Professor of Sanskrit at Allahabad University, has followed up his publication of the Sanskrit text and English translation of the *Mānasāra* by these two works on the same subject; and students of Indian architecture should be grateful to him for accomplishing with such thoroughness a task which has been long overdue, and which must have entailed a tremendous amount of patient and often uninteresting work, in a number of different languages. The *Dictionary of Hindu Architecture* contains all the architectural terms used in the *Mānasāra* and in the known Vāstuśāstras, published inscriptions, and other archæological records with full references and explanations and *Indian Architecture* is, for the most part, an introduction to the text of the *Mānasāra*.

The *Mānasāra* is universally recognized as the standard Hindu treatise on architecture, and is the most complete and probably the oldest one extant, though no doubt it had many predecessors. This being so, it is rather surprising that no serious attempt has hitherto been made by modern scholars to edit and elucidate it. It has never before been translated into English, and most writers on Indian architecture disregard it or scarcely mention it. Eighty years ago indeed Ram Raz examined a portion of it in his excellent "Essay on the Architecture of the Hindus"; but it has never hitherto received comprehensive treatment. Scholars were no doubt shy of its technical terms or discouraged by its "barbarous" Sanskrit, while it must be admitted that the Hindu tradition of presenting aesthetic principles as religious precepts and of embedding scientific matter in astrological formulas and mystic ritual is puzzling and disturbing to the non-Hindu. Nevertheless, the work deserves far more serious study than it has hitherto received, and not only from antiquaries, for Indian craftsmen of today still use the formulas of fifteen hundred years ago and the precepts of the *Śilpa-śāstras* are still the everpresent guides of the architect and the sculptor.

For the *Mānasāra* is, apart from its astrology, a practical craftsman's handbook, none the less so because its directions are regarded as ritual rules and its classifications seem often arbitrary and fantastic. In it, as always in India, art is a practical affair, a means to a definite end, never unrelated to life and worship. *Mānasāra* means "the essence of measurement"; and what would now be considered the practical part of the work consists of explicit directions regarding town-planning and the selection of sites, and more especially of minute statements of the mathematical proportions of every kind of building and image. This is not the place to examine the principles on which these proportions are worked out, nor are they always easy to follow without plans. The Essay of Ram Raz was illustrated, and it would have been a great help if Dr. Acharya could have rounded off his work with the addition of a series of well-executed plates. These would have been of especial value in examining what is perhaps the most interesting chapter of *Indian Architecture*, that in which the treatise of Vitruvius and the *Mānasāra* are compared. All that need be said here is that the two works, with all their essential differences, have so many striking affinities (in their classification, for instance, of the orders and mouldings) that we can hardly doubt that the standard Indian treatise was somehow or other influenced by the Roman architect who lived five hundred years or more earlier. Exactly how is another question, the solution of which would establish some important conclusions in architectural history.

(*The Times* Literary Supplement, May 31, 1928.)

These two volumes are a valuable addition to the few English books dealing with the little understood principles of Indian architecture and architectural terms as practised and used by the *salāts* who built the fine old shrines whose ruins remain to display their skill in construction and taste in

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details. Professor Acharya is to be congratulated upon the result of his labours in the very great amount of careful and painstaking search and the digging out of so much useful material from the vast amount of Indian literature he has consulted. The printers, however, have not turned out the books so well as the subject matter deserves. The numerous and lengthy quotations in the *Dictionary* would have been better in smaller type; and that of the *Mānasāra* is by no means clean. The paper is poor.

The author may not be averse to a few suggestions in the event of a second edition being produced. As ancient Hindu architecture, in its modes of construction, designs, and details, is more or less strange compared with anything a would-be student has been familiar with, it would be a very great help if the *Dictionary* were well illustrated with small vignette insertions, showing, for instance, the different types of pillars, mouldings, etc.

The *Mānasāra*, or "essence of measurement" probably written between A. D. 500 and 700, which is one of the *Silpa-śāstras* dealing with achitecture does not confine itself wholly to that art, but, like the others, busies itself with many other things, such as the planning of towns, villages, and forts, the orientation of buildings, the classification of kings and their ceremonial rites, the manufacture of couches, cars and chariots, ornaments, jewels, etc.

The title would have been better "Hindu Architecture," since "Indian" as now used, includes Muhammadan. Measurements are laid down for every detail both in architecture and sculpture, so it is not to be wondered at that we find such sameness, stiffness and oft-repeated conventional forms in the old temples which are still standing, especially in mediaeval work. The advance of Islam gradually influenced later work and brought into it much that is not Hindu. Of civil buldings very few now remain, and it is on the ancient temples, with a few tanks and wells, that the student has to depend for his practical acquaintance with Hindu acrhitecture. The "essence of measurement" is brought out in all its scrupulous exactitude where every measurement in a building must be regulated upon one measure—that of the side of the shrine and nothing is left to the *salat* to express his own individuality. And the measure of the side of the shrine depended upon the length of blocks that could be obtained from the quarry, for the shaft of every pillar was always a single stone from the top of the base to the neck of the capital: it was never built, as a rule, of more than one stone.

Professor Acharya does not confine himself to a description and summary of the contents of the *Mānasāra*, but gives us references to architecture in the ancient epics, the *Puranas* and other works and a résumé of the contents of many other *śilpa-śāstras*. He also ventures upon a long discussion about the similarity between the *Mānasāra* and Vitruvius, which he appears to think had some connexion the one with the other.

The index, which is practically a glossary, is good and full.

H. C.

(J. R. A. S., October, 1928.)

Dr. Acharya in this book (*Indian Architecture*) gives us a compact and interesting, though somewhat technical, treatise upon Indian Architecture in the literature of India. The standard work upon the subject is the *Mānasāra*, and a description of that work forms the kernel, so to speak, of Dr. Acharya's book.

The author begins with a general survey of the references to architecture in literature, dealing first with Vedic and Buddhist works, then with the *Purāṇas*, *Āgamas*, and other works. In his second section he summarizes the *Mānasāra* and gives shorter accounts in turn of the following works: the *Mayamata*, the *Aṁśumad-Bheda* of Kaśyapa, the *Visvakārmiya-śilpa*, the *Agastya*, the *Samgraha*, and one or two others. Section III deals with the Position of the *Mānasāra* in Literature. Here, types of buildings are discussed, measurements, the five orders, and the three styles.

In Section IV, Dr. Acharya discusses the possible relationship between the *Mānasāra* and the well-known treatise of Vitruvius. He deals at length with the similarities not only in content and treatment, but also in style, between the two works, and declines "to attribute all these affinities to mere chance." This is a particularly interesting chapter.

Section V, *Age of the Mānasāra*, deals with various indications by which the date of the *Mānasāra* may be approximately fixed, and decides that it must have been written somewhere between A.D. 500 and 700. An appendix treats of certain features characteristic of the language of *Mānasāra*.

The book has an excellent index.

A work like this (*A Dictionary of Hindu Architecture*) which treats of "Sanskrit architectural terms, with illustrative quotations from *śilpa-śāstras*, general literature and archaeological records," will appeal probably to a comparatively small circle of students, but to them its value will be very great. Hitherto, there have been no dictionaries, even in Sanskrit, which have fully treated architectural terms, so that the present work, which has entailed enormous labour—the author tells us that he has gone through 50,000 pages of archaeological material—breaks entirely new ground. Dr. Acharya's work has been the greater since,

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for his purposes, the term, "architecture" must include everything built or constructed, from a royal palace to a sewer, or a garden to a bird's nest.

The work is based primarily on the *Mānasāra*, but its sources include all the architectural treatises of the *Vāstuśāstras*, and those portions of the *Āgamas* and *Purāṇas*, etc., which deal with architecture. In addition, all the inscriptions published in such collections as *Epigraphia Indica*, the *Indian Antiquary*, and *Epigraphia Carnatica*, etc., have been taken into account.

Dr. Acharya has arranged his dictionary according to the Sanskrit alphabet. He gives, in English, a concise explanation of each term, followed by quotations sufficiently long to make clear the exact connotation of that term in its various uses. Not only are precise references given to passages in such works as the *Indian Antiquary*, when they have a bearing on the subject, but long and adequate quotations are given. The work is tremendously detailed: the entry *Stambha*, for example, occupying sixty pages. There are two appendices, the first of which gives a sketch of Sanskrit treatises on Architecture, and the second, a list of architects. Finally there is an index arranged according to the English meanings of the Sanskrit terms.

(*Asiatica*, June-July, 1929.)

A number of Sanskrit works have recently been published, and it had now become necessary to explain the expressions and terms to Europeans who have of late taken an interest in Hindu architecture. A number of European works have appeared but none has existed so far which elucidates these difficult terms. The work (*A Dictionary of Hindu Architecture*) is conscientously carried out, as is shown by the fact that the author is not satisfied with merely giving the English terms, but quotes from the Sanskrit contexts in which the words occur.

As regards the second work—*Indian Architecture according to the Mānasāra-Śilpa-śāstra*—the author intended to issue it as an Introduction to his edition of the Sanskrit text and English translation which are in preparation. But in studying his subject he found the material increased considerably, and he has now produced a volume in crown 4to size of 268 pages. It is most gratifying that Indian scholars adopt the great care generally exhibited by European professors, and Mr. P. K. Acharya is one of them. The work is well divided; it gives a general survey of architecture from the most ancient times onward; it provides a summary of the various treatises on architecture, and finally subjects the *Mānasāra* to examination. Full references are also provided, and the index alone, beginning on p. 215, is a most painstaking performance.

Both volumes will be welcomed by the increasing number of workers in and lovers of Indian art.

(*Asiatic Review*, April, 1928.)

The indigenous Indian literature on architecture has not received much attention so far. Ram Raz has published an *Essay on the Architecture of the Hindus* (London 1834), which, I am afraid, is very difficult of access, and some works were edited by Ganapati Sastri in Trivandrum Sanskrit Series. Besides that, we knew the portions dealing with architecture in the *Purāṇas*.

Now Prof. Acharya has been working on the subject for several years and has paid special attention to the principal work, the *Mānasāra*. In 1918, he graduated at Leyden with a thesis on this work whereafter he published in the *Allahabad University Journal*, a paper on its relation to Vitruvius. Now there comes a comprehensive treatise together with a Dictionary of the architectural terms and a survey of the literature, and an edition and translation of the *Mānasāra* are promised for a near future.

These works are to be greatly welcomed, making as they do, accessible for research a new province of Indian literature.

The author tries to prove that the *Mānasāra* in many respects is similar to the classical science of architecture as we know it from Vitruvius. Though his demonstration cannot yet be said to be definitive, yet he has succeeded to show so many coincidences that a connection can hardly be doubted any longer. How this connection has come about, the author has not tried to show, and perhaps, too, he has not thought it necessary. For, it is well known long since that classical architecture and fine arts have exercised a lasting influence on the development in North-West India. In that corner, Greeks and their half-breeds had settled for centuries, and it seems that in an Indian inscription of the second century there is even mentioned an architect ("Navakarmika") with a Greek name, viz., the "dasa Agisala" of the relic casket of the Kaniska Stupa near Peshawar.

On the whole, it is only the edition that will enable us to form an opinion about these many questions raised by the author. But even now we are very much indebted to him, and particularly his *Dictionary* will be very welcome. It gives not

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only a copious list of technical terms of architecture more especially those to be found in the *Mānasāra*, but also circumstantial references to the literature as well as a survey of the indigenous Indian literature relative to the matter, which is for the greatest part only available in MSS.

Yet with pioneer works completeness must not be insisted upon, and what is being given to us we shall accept with sincere gratitude.

(*Deutsche Literaturzeitung*, 1928 14 *Heft* 660.—Extracts translated from the original German by Dr. Ludwig Alsdorf, PH.D.)

Dr. A. K. Coomaraswamy.—"These two volumes, the latter (*Dictionary*) especially, are monumental works, and will be indispensable to every student of Indian architecture and realia. Only those who work along these lines will realise the great labour involved in the preparation of such books, especially when they are almost the first of their kind; the serious study of the Indian *Śilpa-śāstra* has been too long delayed, and a warm welcome may be extended to the Professor's undertaking.

The following notes, however, are meant to be a further contribution to the subject and an acknowledgment of the value of what the Professor has already accomplished, rather than further criticism".

(*Journal of the American Oriental Society*, vol. 48, no. 3, pp. 250 fol.)

This dictionary owes its name to the University of London. A glossary of the architectural terms used in the *Mānasāra*, the standard work on Hindu architecture, was prepared for the author's private use when he found it indispensable after struggling for two and a half years to edit for the first time and translate into English a text which is written in five different scripts, possesses eleven badly preserved manuscripts, has undergone five recensions and comprises more than 10,000 lines of a language rightly remarked by Dr. Buhler as the "most barbarous Sanskrit." In this connection there arose an occasion for the author to express to the University the opinion that an Encyclopædia of Hindu architecture was badly needed. Architectural expressions appear throughout the whole field of general Sanskrit literature and the epigraphical records, as well as in the extensive special branch of literature known as *Vāstu-śāstras*, more familiarly called *Śilpa-śāstras*. Existing dictionaries, in Sanskrit, English, or any other language, do not elucidate architectural expressions: and the texts of the *Vāstu-śāstras* have been waiting for hundreds of years to be unearthed from manuscripts which are quite inaccessible without the guidance of a special dictionary that would also be instrumental in bringing to light many new things hitherto left unexplained in inscriptions and general literature. The University selected the author as the person most immediately concerned and entrusted him with the task suggesting that he should "make a full dictionary of all architectural terms used in the *Mānasāra* with explanations, in English and illustrative quotations from cognate literature where available for the purpose." Thus the terms included in this dictionary are primarily those found in the *Mānasāra*. But all the new architectural terms of any importance discovered in all the known architectural treatises, epigraphical documents and general literature have also been added. To form even a faint idea of the Herculean labour involved in bringing out this colossal work a perusal of the preface is necessary. This the first volume published embraces 882 pages, one more volume *Indian Architecture according to Mānasāra Śilpa-śāstras* has been published and two other volumes to complete the dictionary are in the Press. This dictionary is a veritable Encyclopædia of Hindu architecture. It deals with some 3,000 terms, relating to architecture, sculpture and cognate arts, and covers a vast number of topics. Under each term is brought together useful information in the form of a short article, illustrated, with quotations from *Śilpa-śāstras*, general literature and archæological records. It is a pioneer work. It is hoped that it may be instrumental in explaining many things hitherto left obscure in inscriptions and general literature. Two appendices enhance the utility of the work: in one appendix is given a sketch of the literature on the subject, while the other contains histories of ancient Indian architects, together with a short description of their works. Great has been the labour of the erudite author and he is to be congratulated on its successful issue, so also the publishers for the volume as regards its printing and general get-up is all that can be desired.

It (*Indian Architecture*) is a handbook of Indian Architecture, sculpture and cognate arts. The author, Dr. Prasanna Kumar Acharya, I.E.S., is an Indian Sanskrit scholar who has been trained in Europe in scientific methods of criticism and who has given the substance of a number of printed works and manuscripts, belonging to libraries in India and Europe which have been visited by him. The book gives an account of the architecture of the Vedic, the Buddhist and the classical periods of India up to the Mohammedan age. An interesting feature is the comparison drawn between the Indian standard work *Mānasāra* and the European standard work of the Roman architect, Vitruvius. Striking similarities are shown to exist between Greco-Roman and Indian architecture.

(*Indian Engineering*, January 21 and 28, 1928.)

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Dr. Kalidas Nag, M.A., D.Litt.—While Hindu Painting and Decorative art were hovering between hope and despair as to the chance of gaining "occidental" recognition (the only recognition that carried weight!) Hindu architecture, attracted the notice of all experts by its undeniable grandeur and originality. Ever since the publication of the *Essay on the Architecture of the Hindus* by Ram Raz, published in London (1834), there was a steady increase in the appreciation of the Hindu style and of the stone epics of India. The monumental studies of Rajendralal Mitra on Orissan architecture, followed by the work of Manomohan Ganguli, have demonstrated that the interest in the subject was growing. The enormous documentation of Cunningham, Burgess, and others of the Archaeological survey challenged the attention of artists and archaeologists all over the world. But the indigenous tradition of India with regard to the science and art of Architecture did not receive the serious examination long overdue, before Dr. Acharya came forward to devote years of his academic studies to the elucidation of the problems of the Hindu *Silpa-śāstras*. Accidentally coming across a copy of *Mānasāra* he plunged deeper and deeper into the intricacies of Hindu constructional science: the more baffling were the problems of the texts preserved in the 'most barbarous Sanskrit,' the more intense became his zeal which ultimately led to the development of this splendid *Dictionary* —the first of its kind—of Hindu architecture. Thanks to the comprehensiveness of Hindu masters of the science, Architecture in the work has been treated in its broadest sense, implying practically everything that is constructed,—from buildings religious and secular to town-planning, laying out of gardens, making of roads, bridges, tanks, drains, moats, etc., as well as the furniture and conveyances. Thus the *Dictionary* of Dr. Acharya gives us for the first time in a handy volume a rich vocabulary hitherto unknown or only vaguely known. Dr. Acharya has earned the permanent gratitude of all Indologists by collating and collecting not only manuscripts (largely unpublished) but also the epigraphic data scattered in the bewildering documents of Indian inscriptions which have given a sureness of touch and a precision of connotation that are admirable. Dr. Acharya has spared no pains to put the meaning of the terms as much beyond doubt as possible, for he has placed the terms invariably in their organic context by quoting *in extenso* from the generally inaccessible texts. Thus the *Dictionary* will not only react in a wholesome way on our accepted notions of Hindu art and archaeology but also on the future compilation of a comparative lexicon of the Hindu technical terms—our future *Paribhāshendu-Sekhara*.

As a pioneer work, it will hold its place high amongst the recent publications of Indology. As a pioneer work again the author, let us hope, will take constant note of friendly suggestions with a view to enhance the scientific value of this lexicon. While comparisons with European treatises on Architecture (*e.g.* Vitruvius) are interesting it is more useful to make each term shine indubitably out of a comprehensive juxtaposition of pertinent texts found, published or noticed anywhere in India, with a special eye on *local* peculiarities and their correlation with *regional* styles. Rich materials are still lying idle in the latest publications of the Trivandrum Sanskrit series (*e.g.*, *Manjuśri-Mūla-Kalpa* or *Tantra*, translated into Tibetan) and in the Gaekwad Sanskrit series (*e.g. Samaragana-Sutradhara* and *Mānasollāsa*, etc.). So Laufer's Monograph on *Chitralakshaṇa* seems not to have been utilised. But the more serious omission is perceptible in another field which has furnished some of the noblest specimens of Indian architecture. I mean the field of Greater India where we meet even today *Borobudur* proclaiming the titanic architechtonic genius of the Sailendra sovereigns of Srivijaya (Sumatra, Java) and *Angkor Vat*, the soaring Vimāna of Vishnu constructed by King Paramavishnuloka of Camboj and designed by the master Architect Divākara. Let us hope that in his next edition Dr. Acharya will enrich his lexicon by incorporating the data imbedded in the epigraphic and monumental documents of Greater India.

Two appendices containing enumerations of the important Sanskrit treatises on Architecture and of historical architects, enhance the value of the book. May we request the learned lexicographer to add a special appendix of the technical terms and names scattered in the various living vernaculars of India where we find, as in Orissa (cf. Nirmal Bose: Konarak), native architects still constructing according to their *vernacular Vāstu-śāstras* or even conserving a rich tradition in *bhāsā* vocabulary (oral or textual)?

This volume (*Indian Architecture*) incorporates the general problems, historical as well as textual, that form the introduction to Dr. Acharya's *Dictionary*. In the first thirty pages the author gives a tantalising survey of the popularity of Architecture evinced by the Vedic, the Buddhist and the classical literature. We hope that the author will make the treatment more exhaustive. The next hundred pages are devoted to a very useful summarising of the contents of the outstanding *Śilpa-śāstras*, e.g., *Mānasāra*, *Mayamata*, and such manuals ascribed to Viśvakarma, Agastya, Kasyapa, Mandara and others. The comparison instituted between *Mānasāra* and Vitruvius may or may not lead to a discovery of the order of that of a *Romaka Siddhānta* and *Horāśāstra*, yet the similarities are striking. But the most important sections are the author's discussions, relating to the three styles or orders of architecture—Nāgara, Vesara

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and Drāvida—representing the three geographical divisions of India. We recommend the books of Dr. Acharya to all Indologists and expect eagerly the publication of the two supplementary volumes now in press.

(*The Modern Review*, February, 1928.)

(London Correspondent.)

The two books recently written under instructions from the Government of India on Hindu architecture and published by the Oxford University Press, ought to be valuable not only to the student of architecture, but also to the student of peoples of the world, for architecture expresses almost more than anything else the ideals and ideas a people hold at any given time. For the scholar these two books should be invaluable, as they help to elucidate in architectural terms details of the distant past, that have hitherto been clothed in mystery. The texts of the *Vāstu-śāstra* have, as the author states in his preface, been waiting for hundreds of years to be unearthed from manuscripts, which are quite inaccessible without the guidance of a special dictionary. This is the task to which the author set himself, and those who are competent to express an opinion agree that he has amply fulfilled his mission and has brought to light many new things hitherto unexplained in inscriptions and general literature.

The second book is a handbook of Indian architecture and deals with the Vedic, Buddhist and classical periods up to the Mahomedan times.

Today there is in Great Britain an ever-increasing number of people to whom such books appeal, probably because of the work of the India Society and kindred bodies who have stimulated thought in this direction by persistent effort. It is, therefore, likely that the present book will find a considerable reading public here as well as in the East.

(*The Leader*, February 24, 1928.)

Dr. Beni Prasad M.A., PH.D., D.Sc.—Dr. P. K. Acharya attempts to offer the results of his twelve years' study of Hindu architecture in four volumes, two of which have just been published while the other two may soon be expected to see the light. They are based on *Mānasāra*, the standard authority, on a number of minor works and a host of chapters or references, legal, religious and general literature, as well as inscriptions. The *Dictionary*, in particular, a pioneer work, is a monument of diligent research and systematic arrangement. In words quoted in the preface, 'no one but those who have taken part in similar labours, can at all realize the amount of tedious toil, I might almost say drudgery, involved in doing everything single-handed, collecting the quotations and verifying references and meanings making indices and lists of words, sorting and sifting an ever-increasing store of materials, revising old work, arranging and rearranging new, correcting and re-correcting, writing and re-writing, and interlineating copy, till reams upon reams of paper have been filled, putting the eyesight, patience and temper to a severe trial.' The series is addressed to scholars and advanced students but all interested in the scientific study of Hindu culture or in that of fine arts in general will find it instructive.

The Hindu *Śilpa-śāstra* or *Vāstu-śāstra* is a comprehensive but by no means unsystematic study. It deals with all kinds of buildings, town-planning, gardens and market places, ports and harbours, roads, bridges, gateways, etc., wells, tanks, trenches, drains, sewers, moats, walls, embankments, dams, railings, etc., furniture like bedsteads, couches, tables, chairs, baskets, cages, nests, mills, conveyances, lamps, etc., and even dresses and ornaments such as chains, crowns, headgear and foot and arm wear. The dominant topic, however, is architecture—the plan and erection of religious, residential and military edifices and their auxiliary members and component mouldings. The science which like the *Dharma-śāstra*, *Artha-śāstra* and *Kāma-śāstra*, professes to derive its first origins from Brahmā himself, developed in the course of centuries and reached its culmination about the sixth century A.D. in the great treatise called *Mānasāra* probably after the name of its author.

Here as elsewhere in the domain of Hindu history it is difficult to determine how far the theoretical descriptions in literature correspond with the practical realities of life. A close comparison of architectural precepts with the details of archaeological finds and the narratives of foreign visitors like Yuan Chuang (7th century A.D.) suggests that the former, while not literally true to facts, are largely based on practice. It is interesting to infer that in ancient India, in spite of all the other-worldliness of philosophers and spiritualists, those who could afford maintained a high standard of living. Thus from a passage in the Buddhist work *Cullavagga*, VI, 4, 10 we learn that houses comprised dwelling rooms, retiring rooms, store-rooms, service-halls, halls with fire places, closets and cloisters, halls for exercise, wells and ponds, sheds for wells and open-roofed sheds, bath rooms and halls attached to them. Of hot-air baths the following description was given by the late T. W. Rhys Davids on the basis of the Vinaya Texts III, 105-110, 297. 'They were built on an elevated basement faced with brick or stone with stone stairs leading up to it, and a railing round the verandah. The roof and walls were of wood, covered first with skins and then with plaster, the lower part only of the wall being faced with bricks. There was an ante-chamber and a hot room and a pool to bathe in. Seats were arranged round a

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fire-place in the middle of the hot-room and to induce perspiration hot water was poured from the leathers.' Again, as we learn from the *Dīgha Nikāya*, there were open air bathing tanks, with flights of steps leading to the water, faced entirely with stone and ornamented with flowers and carvings. It is needless here to enter into the details of domestic furniture but it is interesting to note, *inter alia*, that benches were made long enough to accommodate three persons, that couches were covered with canopies, and that there were several types of Asandis such as sofas, armed chairs and cushioned chairs.

The plan of a village, outlined in the ninth chapter of *Mānasāra*, is theoretical, for its details do not tally with any of the realistic descriptions by Geeek, Chinese or Arab visitors. None the less, it is instructive. A village, we are told, should be surrounded by a wall of brick or stone pierced by four main gates which should be connected by roads. The village should thus be divided say into four principal blocks. A highway should also run round the village and public buildings be located on it. The whole inhabited area should be well-supplied by ponds and tanks. Caste which influenced all life and thought in ancient India did not leave town planning untouched. It is proposed that the best quarters should be reserved for the Brahmans and that the Chandālas should live outside the limits of the village.

In the interests of sanitation and decency it is laid down that the temples of fearful deities and places for cremation should be situated outside the walls. Everywhere drains should follow the slope. The tenth chapter of *Mānasāra* sketches plans for towns on similar lines, making special mention of parks, commons, shops, exchanges, temples, guest-houses, colleges, etc., and giving elaborate direction for their construction. It is impossible even barely to touch the fringe of the vast subject in the course of a short review. Those interested in this highly important aspect of ancient Indian culture will do well to consult Dr. Acharya's detailed, well-documented and scholarly productions.

(*The Leader*, December 4, 1927.)

Notable publications by the United Provinces Government

All students of Indian Art in England, and a good many in India, should be grateful to the U. P. Government for these excellent books. They contain the fruits of the labour of an Indian Educational Service officer, who has spent about 12 years on these works which, to say the least, are stupendous.

Except for an essay on the Architecture of the Hindus by Ram Raz published in 1834, no attempt till now was made to present the Ancient Indian Architecture in a scientific, clear, and methodic way. To Professor Acharya, therefore, goes the credit of exploring this field of knowledge like a pioneer worker, and of bringing to light a branch of ancient Indian culture which contains interesting, even rather facinating, materials.

A Wise Term

Silpa-śāstra or *Vāstu-śāstra*, which is conveyed by the term "architecture," is much wider than the English term. "It denotes all sorts of buildings, religious, residential, and military, and their auxiliary members and component mouldings. Secondly, it implies town-planning; laying out gardens; constructing market-places; making roads, bridges, gates; digging wells, tanks, trenches, drains, sewers, moats; building enclosure-walls, embankments, dams, railings, ghats, flights of steps for hills, ladders, etc. Thirdly, it denotes articles of house-furniture, such as bedsteads, couches, tables, chairs, thrones, fans, wardrobes, clocks, baskets, conveyances, cages, nests, mills, etc. Architecture also implies sculpture and deals with the making of phalli, idols of deities, statues of sages, images of animals and birds. It includes the making of garments and ornaments, etc."

Professor Acharya has divided his *Indian Architecture* into five parts which give us a very clear idea of the subject, its authorities and all that is generally required for a quick apprehension of the subject.

General Survey

In Part I Professor Acharya gives a general survey of the whole range of ancient Indian literature and bears out "that the authors of the Vedic literature were not ignorant of stone-forts, walled cities, stone-houses, carved stones, and brick edifices." The relics of Mahenjo-daro and Harappa unearthed by the Archaeological Department under the able guidance of Sir John Marshall give the same evidence of a time much earlier than the earliest Veda. The Buddhist and Jain literature is replete with references to buildings, furniture and sculpture of a very high order. The Classical Sanskrit literature bears the testimony of a very well-developed art in all these respects; several *Purāṇas* have an elaborate description of Silpa and some of the *Āgamas* whose main object is "to inculcate the mystical worship of Śiva and Śakti" devote considerable attention to architecture.

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The Mānasāra

In Part II he gives a very detailed summary of the *Mānasāra* which is his main study as also brief accounts of several other works of well-known authorities but which lie buried still in manuscript form. The *Mānasāra* contains seventy chapters, "the first eight are introductory, the next forty-two deal with architectural matters, and the last twenty are devoted to sculpture."

Here we have what claims to have taken the whole manifestation of architectural art as its subject. It is up to the present moment, perhaps the most ambitious effort of the kind, and the author has spared no pains to make his work as complete and as illustrative as possible.

Part III described the position of *Mānasāra* in Hindu literature and gives certain interesting facts. The styles are fully described and discussed. We are told that, according to *Mānasāra* there are three of them, Nāgara, Vasara and Drāvida, and that they apply both to architecture and sculpture.

Comparison

Part IV compares *Mānasāra* with the well-known treatise of Vitruvius on architecture which belongs to the first century before Christ. Professor Acharya has been trained in scientific methods of criticism in Europe and in this part of the work we find a considerable scope for this training. The comparison is thoughtful, reasoned and balanced. The conclusions are cautious and well-supported. The author has clearly shown "that there are undeniable similarities between the two standard works and that their affinities do not seem to be accidental." He has wisely left the question of the debt of one author to the other or of both to some common source, quite open. In the present resources of our knowledge it is impossible to arrive at a more definite conclusion.

In Part V he collaborates in a scholarly way both the internal and external evidence for arriving at correct age of *Mānasāra*. Here we have ample evidence of Professor Acharya's unrivalled grasp of the subject, his critical acumen and of his indefatigable industry and enthusiasm in having ransacked the whole of the ancient Indian Literature covering thousands of pages in print and in manuscript. "The evidence submitted above would warrant the extent of the period of the *Mānasāra* from 500 to 700 A.D."—by no means an unwarranted conclusion.

Defective Language

It is regrettable that the language in which this important work has been found is very defective and faulty and has been termed "barbarous Sanskrit" by authorities like Dr. Bühler and Dr. Sir Ram Krishna Bhandarkar. It is all the more creditable for Professor Acharya to have taken pains and construed the text correctly. In the appendix the learned author has given us some idea of the defective language by collecting together the irregularities.

Professor Acharya's *Dictionary of Hindu Architecture* is a monumental work, the first of its kind. It deals with three thousand words relating to architecture and sculpture and cognate arts. Under each term is brought together all the necessary informations in the form of a short article illustrated with copious quotations from the ancient printed books as well as manuscripts, the general literature and the archaeological records. And this has been done with a thoroughness and accuracy which are the author's own. Full quotations for bringing out each and every shade of the meaning of a word are given, in effect the *Dictionary* becomes more of an Encyclopædia rather than a Dictionary. The learned author has laid the scholars and the general public under a deep debt of obligation by removing a long-felt want.

(*The Pioneer*, February 13, 1928.)

(London correspondent.)

Dr. Prasanna Kumar Acharya, I.E.S., Professor of Sanskrit in the University of Allahabad, is now recognised as one of the leading Indian authorites on his special subject, particularly in its relation to ancient architecture. He has recently written, under instructions from the Government of the United Provinces, two books that should be of considerable value to students, namely. *A Dictionary of Hindu Architecture* and *Indian Architecture according to Mānasāra Śilpa-śāstra*—both published by the Oxford University Press. The U. P. Government have borne the expenses of both publications, which will be regarded by scholars as a contribution of permanent importance in the elucidation of the subjects discussed.

This is not the place in which to give a lengthy review of these two volumes the first of which runs to 861 pages. This book is a monument of erudition and patient industry. A man who can produce works of this order must be wholly immersed in his subject. Existing dictionaries, in Sanskrit, English, or any other language, do not elucidate the architectural terms of a long distant past, and without such a survey as Dr. Acharya has undertaken there could be no proper appreciation of the ancient genius. The texts of the *Vāstu-śastras* have, as the author stated in his preface, been waiting for hundreds of years to be unearthed from manuscripts

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which are quite inaccessible without the guidance of a special dictionary. This is the task to which the author has addressed himself, and those who are competent to express an opinion will agree that he has brought to light many new things hitherto left unexplained in inscriptions and general literature.

The other work which is somewhat less voluminous, is a Handbook of Indian Architecture, Sculpture and cognate Arts. It gives an account of the architecture of the Vedic, the Buddhist, and the classical periods of India up to the Mohammadan age. Such a work should be of great interest to those in this country, as well as in the East, whose attention has been drawn to these subjects by the publications of the India Society and kindred bodies. There is quite a large constituency nowadays to which works of this character, dealing with the ancient arts of India, afford a real attraction. An interesting feature of Dr. Acharaya's present study is the comparison which he draws between the Indian standard work, *Mānasāra*, and the European standard work of the Roman architect, Vitruvius. The book might have made a more popular appeal if the text had been interspersed with a few illustrative reconstructions, in plans or drawings, of the architectural features described. This, however, was not the purpose of the author. Rather it was to provide a fount of information from which future seekers may gain knowledge of an art which can never entirely lose its place in human records. What the learned world demands from India is certainty of data in these matters, and this has been undoubtedly supplied by Dr. Acharaya's researches. In these volumes, and in others that are still in the press, he has illumined a comparatively unknown branch of Sanskrit study, and the fruit of his long and arduous labours will assuredly be of abiding value to scholars everywhere.

(*The Hindu*, Madras, February 23, 1928;

The Tribune, Lahore, February 28, 1928;

The Hindustan Review, April, 1928.)

Extract from the *Annual Bibliography of Indian Archaeology*, 1928, p. 61.

150. *[Dr. Prasanna Kumar ACHARYA:—A *Dictionary of Hindu Architecture*. Oxford University Press : 1927]. See : *An. Bibl. I. A.*, 1927, no. 124.

Reviewed : *Rūpam*, nos. 35—36, July—Oct. 1928, pp. 39—44, by Akhay Kumar MAITRA. *FRAS*, 1928, pp. 943f., by H. C. : " ..... a valuable addition .... careful and painstaking search .... The printers, however, have not turned out the books so well as the subject matter deserves ".

The Asiatic Review, 1928, p. 349: "The work is conscientiously carried out ....." *Ind. Art. & L.*, vol. II, pp. 96f., by E. B. HAVELL: " . . . a monument of patient research which will be of invaluable help for the student."

Dtsche Lit. Ztg., 1928, columns 659—661, by Sten KONOW: " Bei Pionier-Arbeiten darf man....auf Vollständigkeit nicht Anspruch machen, und was uns gegeben wird, werden wir mit aufrichtiger Dankbarkeit entgegennehmen."

RAA, 1928, pp. 53f., by Jean BUHOT: "....ouvrage très digne d'éloges ; en même temps il n'est pas douteux qu'une édition ultérieure ne l'améliore."

Asiatica, vol. I, pp. 225f.

The Pioneer, Allahabad, 13th Febr. 1928.

Cp. below: COOMARASWAMY, no. 162.

151. *[Dr. P. K. ACHARYA, I. E. S., M. A., D. Litt.:—*Indian Architecture according to Mānasāra-śilpa'āstra*. Oxford University Press : 1927]. See *An. Bibl. I. A.* 1927, no. 125.

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The Asiatic Review, 1928, p. 349: " It is most gratifying that Indian scholars adopt the great care generally exhibited by European professors, and Mr. P. K. ACHARYA is one of them."

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Asiatica, vol. I, p. 225.

The Pioneer, Allahabad, 13th Febr. 1928.

Cp. below COOMARASWAMY, no. 162.

(*Amrāvatī marble relief*), see below, Section IV, no. 512.

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CXXXVI—CLVII (Sculptural)

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ARCHITECTURE OF MĀNASĀRA

ILLUSTRATIONS

OF

ARCHITECTURAL AND SCULPTURAL OBJECTS

WITH A SYNOPSIS

BY

PRASANNA KUMAR ACHARYA, I.E.S.

M.A. (CALCUTTA), Ph.D. (LEYDEN), D.Lit. (LONDON)

Dean of the Faculty of Arts, Head
of the Oriental Departments, Professor
of Sanskrit, University of Allahabad

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ILLUSTRATIONS
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CHAPTER VI
GNOMONS AND PEGS

Plate no.	Figure	Description
I	Gnomons	Varying in accordance with the variation of light shadow in different months.
II	Fig. 1	General method of finding cardinal points (for orientation of buildings).
	Fig. 2	Alternative method of finding cardinal points
	Fig. 3	Method of fixing foundation pegs.

CHAPTER VII
SITE PLANS OF THIRTY-TWO VARIETIES

Plate no.	Figure	Description
III	First variety	Sakala plan of 1 plot.
	Second variety	Pechaka plan of 4 plots.
	Third variety	Pīṭha plan of 9 plots.
IV	Fourth variety	Mahāpīṭha plan of 16 plots.
	Fig. 1A	Same, arranged differently.
V	Fifth variety	Upapīṭha plan of 25 plots.
VI	Sixth variety	Ugrapīṭha plan of 36 plots.
VII	Seventh variety	Sthaṇḍila plan of 49 plots.
VIII	Eighth variety	Chaṇḍita plan of 64 plots, square.
IX	Eighth variety	Same, circular.
X	Ninth variety	Parama-śāyika plan of 81 plots, square.
XI	Ninth variety	Same, circular.
XII	Ninth variety	Same, triangular.
XIII	Tenth variety	Āsana plan of 100 plots, square.
XIV	Tenth variety	Same, circular.

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Plate no.	Figure	Description
		Not illustrated
	Eleventh variety	Sthānīya plan of 121 plots.
	Twelfth variety	Deśya plan of 144 plots.
	Thirteenth variety	Ubhaya-chaṇḍita plan of 169 plots.
	Fourteenth variety	Bhadra plan of 196 plots.
	Fifteenth variety	Mahāsana plan of 225 plots.
	Sixteenth variety	Padma-garbha plan of 256 plots.
	Seventeenth variety	Triyuta plan of 289 plots.
	Eighteenth variety	Karṇāshṭaka plan of 324 plots.
	Nineteenth variety	Gaṇita plan of 369 plots.
	Twentieth variety	Sūrya-viśālaka plan of 400 plots.
	Twenty-first variety	Susaṁhita plan of 441 plots.
	Twenty-second variety	Supratikānta plan of 484 plots.
	Twenty-third variety	Viśālaka plan of 529 plots.
	Twenty-fourth variety	Vipra-garbha plan of 576 plots.
	Twenty-fifth variety	Viveśa plan of 625 plots.
	Twenty-sixth variety	Vipula-bhoga plan of 676 plots.
	Twenty-seventh variety	Viprakānta plan of 729 plots.
	Twenty-eighth variety	Viśālāksha plan of 784 plots.
	Twenty-ninth variety	Vipra-bhakti plan of 841 plots.
	Thirtieth variety	Viśveśa-sāra plan of 900 plots.
	Thirty-first variety	Īśvarakānta plan of 961 plots.
	Thirty-second variety	Chandrakānta plan of 1024 plots.

CHAPTER IX

VILLAGE SCHEMES OF EIGHT TYPES

Plate no.	Figure	Description
XV	First type	Lay-out plan of Daṇḍaka village.
XVI	Second type	Ditto of Sarvatobhadra village.
XVII	Third type	Ditto of Nandyāvarta village.
XVIII	Fourth type	Ditto of Padmaka village.
XIX	Fifth type	Ditto of Svastika village.
XX	Sixth type	Ditto of Prastara village.
XXI	Seventh type	Ditto of Kārmuka village.
XXII	Eighth type	Ditto of Chaturmukha village.

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CHAPTER X

TOWN-PLANS OF EIGHT TYPES AND FORTS AND FORTRESSES OF FIFTEEN TYPES

Plate no.	Figure	Description
XXIII	First type	Lay-out plan of Rājadhānīya city.
XXIV	Fifth type	Left side figure—General outline of Kharvaṭa town.
	Sixth type	Right side top figure—General outline of Kheṭa town.
	Seventh type	Right-side bottom figure—General outline of Kubjaka town.
		Not illustrated
	Second type	Nagara—City without King's palace.
	Third type	Pura - Ordinary residential town.
	Fourth type	Nagarī—City of certain type.
	Eighth type	Pattana—Commercial port on sea-side.
XXV	Eleventh type	Left side top figure—Jala-durga (water-fort).
	Fourth type	Left-side bottom figure, Droṇaka—A fortress or fortified commercial town.
	First type	Right-side top figure, Śibira—Encampment.
		Right-side bottom figure—Details of Fort-gates.
		Not illustrated
	Second type	Vāhinī-mukha.
	Third type	Sthānīya.
	Fifth type	Saṁviddha.
	Sixth type	Kolaka.
	Seventh type	Nigama.
	Eighth type	Skandhāvāra.
	Ninth type	Giri-durga—Mountain fort.
	First variety	Fort on the top of a mountain.
	Second variety	Fort in the valley of a mountain.
	Third variety	Fort on the mountain-slope.
	Tenth type	Vana-durga—Forest fort.
	Twelfth type	Paṅka-durga—Marsh (or clay) fort.
	Thirteenth type	Ratha-durga—Chariot fort.
	Fourteenth type	Deva-durga—Divine fort.
	Fifteenth type	Miśra-durga—Mixed fort.

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CHAPTER XII

FOUNDATIONS AND BRICKS

Plate no.	Figure	Description
XXVI	Foundation	Left-side middle figure—Suggested section of foundation.
	Bricks	Right-side top figure—Intermediate size bricks.
	Ditto	Right-side middle figure—Small size bricks.
	Ditto	Ditto Large size bricks

CHAPTER XIII

PEDESTALS OF COLUMNS OF THREE CLASSES COMPRISING TWELVE TYPES AND PROFILES OF MOULDINGS OF SOME FIFTY VARIETIES

Plate no.	Figure	Description
		MOULDINGS
XXVII	Fig. 1	Vājana.
		Prativājana.
		Ratna-paṭṭa.
		Nimna.
		Splay.
		Vajra-paṭṭa.
		Subsidiary mouldings based on Vājana types
		Classic fillets.
	Fig. 2	Padma, cyma recta and cyma reversa.
	Fig. 3	Karṇa or cavetto.
	Fig. 4	Kumuda or torus.
	Fig. 5	Antarita or scotia.
	Fig. 6	Gopāna or ovolo.
	Fig. 7	Prati and Pratimukha.
	Fig. 8	Kapota or bird's beak.
	Fig. 9	Kumbha and Dhārā-kumbha.

Not illustrated separately but employed

First type	Abja, Ambuja, or Saroruha—cyma.
Second type	Antara, Antarāla or Antarika—fillet.
Third type	Aṅghri—a pillar-like moulding.
Fourth type	Aṁśu—a moulding between cyma and corona
Fifth type	Argala—a bolt-like moulding.
Sixth type	Ādhāra—a flat moulding used as a support.

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Plate no.	Figure	Description
	Seventh type	Ālinga—a fillet with greater projection.
	Eighth type	Āsana—a seat-like moulding.
	Ninth type	Bhadra—a portico-like moulding.
	Tenth type	Bodhikā—a corbel-like moulding.
	Eleventh type	Dala—a petal-like moulding.
	Twelfth type	Gala, Grīva, Kaṇṭha or Kandhara—dado.
	Thirteenth type	Ghaṭa—a pot-like moulding.
	Fourteenth type	Gopānaka—ovolo or corona.
	Fifteenth type	Hāra—a bead-like moulding.
	Sixteenth type	Janman—a plinth-like moulding.
	Seventeenth type	Kampa or Kampana—fillet.
	Eighteenth type	Kumuda—torus or astragal.
	Nineteenth type	Kendra—a point-like moulding.
	Twentieth type	Kshepaṇa—a projecting fillet.
	Twenty-first type	Mushṭi-bandha—a fist-like moulding.
	Twenty-second type	Mūla—a root-like moulding.
	Twenty-third type	Mṛiṇāla or Mṛiṇālikā—a stalk-like moulding.
	Twenty-fourth type	Nāṭaka—a theatre-like moulding.
	Twenty-fifth type	Nāsi, Nāsī or Nāsikā—a vestibule-like moulding.
	Twenty-sixth type	Paṭṭa or Paṭṭikā—fillet.
	Twenty-seventh type	Pratika—a crescent moulding.
	Twenty-eighth type	Prati-vaktra—a face-like moulding.
	Twenty-ninth type	Prati-vājana—a concave moulding like the cavetto.
	Thirtieth type	Prati-bandha—a band-like moulding.
	Thirty-first type	Pratima—an image-like moulding of the base.
	Thirty-second type	Pāduka—a foot-like moulding.
	Thirty-third type	Prastara—corona.
	Thirty-fourth type	Phalakā—abacus.
	Thirty-fifth type	Ratna-kampa—a jewel-fillet.
	Thirty-sixth type	Ratna-vapra—a jewel-cavetto.
	Thirty-seventh type	Tāṭikā—tenia.
	Thirty-eighth type	Tuṅga—a vault-like moulding.
	Thirty-ninth type	Uttara—a corona or upper fillet.
	Fortieth type	Upāna—a rectangular plinth-like moulding.
	Forty-first type	Vapra or vapraka—cavetto.
	Forty-second type	Valabha or valabhī—a thatch-like moulding

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Plate no.	Figure	Description	
		Compound mouldings	
	Forty-third type	Kampa-karṇa—a fillet-ear.	
	Forty-fourth type	Karṇa-padma—an ear-cyma.	
	Forty-fifth type	Khudra-kampa—a small fillet.	
	Forty-sixth type	Kshudra-padma or Kshudrāmbuja—a small cyma.	
	Forty-seventh type	Mahāmbuja—a large cyma.	
	Forty-eighth type	Padma-kampa—a cyma-fillet.	
	Forty-ninth type	Ratna-kampa—a jewel-fillet.	
	Fiftieth type	Ratna-paṭṭa—a jewel-fillet.	
	Fifty-first type	Vajra-paṭṭa—a club-fillet.	
		PEDESTALS	
XXVIII	First type	Vedibhadra class of Pedestals,	of 24 parts.
	Second type	Ditto	of 12 parts.
	Third type	Ditto	of 18 parts.
	Fourth type	Ditto	of 12 parts.
XIX	First type	Pratibhadra class of Pedestals,	of 26 parts.
	Second type	Ditto	of 32 parts.
	Third type	Ditto	of 33 parts.
	Fourth type	Ditto	of 36 parts.
XXX	First type	Mañchabhadra class of Pedestals,	of 30 parts.
	Second type	Ditto	of 31 parts.
	Third type	Ditto	of 33 parts.
	Fourth type	Ditto	of 34 parts.

CHAPTER XIV

BASES OF COLUMNS OF EIGHTEEN CLASSES COMPRISING SIXTY-FOUR TYPES

Plate no.	Figure	Description	
XXXI	First type	Pāda-bandha class,	of 24 parts.
	Second type	Ditto	of 29 parts.
	Third type	Ditto	of 27 parts.
	Fourth type	Ditto	of 28 parts.
XXXII	First type	Uraga-bandha class,	of 18 parts.
	Second type	Ditto	of 20 parts.
	Third type	Ditto	of 22 parts.
	Fourth type	Ditto	of 24 parts.

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Plate no.	Figure	Description	
XXXIII	First type	Pratikrama class,	of 21 parts.
	Second type	Ditto	of 22 parts.
	Third type	Ditto	of 23 parts.
	Fourth type	Ditto	of 24 parts.
XXXIV	First type	Kumuda-bandha class,	of 27 parts.
	Second type	Ditto	of 27 parts.
	Third type	Ditto	of 29 parts.
	Fourth type	Ditto	of 29 parts.
XXXV	Fifth class	Vapra-bandha base,	of 31 parts.
	First type	Puspa-pushkala class,	of 32 parts.
	Second type	Ditto	of 32 parts.
	Third type	Ditto	of 32 parts.
	Fourth type	Ditto	of 32 parts.
XXXVI	Seventh class	Vapra-bandha base,	of 19 parts.
	First type	Śrībhoga class,	of 25 parts.
	Second type	Ditto	of 27 parts.
XXXVII	First type	Śrībandha class,	of 28 parts.
	Second type	Ditto	of 28 parts.
	Third type	Ditto	of 28 parts.
	Fourth type	Ditto	of 26 parts.
XXXVIII	First type	Mañcha-bandha class,	of 26 parts.
	Second type	Ditto	of 26 parts.
	Third type	Ditto	of 26 parts.
	Fourth type	Ditto	of 26 parts.
XXXIX	First type	Śreṇi-bandha class,	of 18 parts.
	Second type	Ditto	of 22 parts.
	Third type	Ditto	of 23 parts.
	Fourth type	Ditto	of 24 parts.
XL	First type	Padma-bandha class,	of 20 parts.
	Second type	Ditto	of 22 parts.
	Third type	Ditto	of 22 parts.
	Fourth type	Ditto	of 19 parts.
XLI	First type	Kumbha-bandha class,	of 22 parts.
	Second type	Ditto	of 21 parts.
	Third type	Ditto	of 24 parts.
	Fourth type	Ditto	of 24 parts.
	Fifth type	Ditto	of 25 parts.

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Plate no.	Figure	Description	
XLII	Fourteenth class	Ratna-bandha base,	of 26 parts.
	Fifteenth class	Paṭṭa-bandha base,	of 20 parts.
	Sixteenth class	Śrīkānta base,	of 38 parts.
	Seventeenth class	Kampa-bandha base,	of 36 parts.
XLIII	First type	Kukshi-bandha class,	of 18 parts.
	Second type	Ditto	of 19 parts.
	Third type	Ditto	of 27 parts.
	Fourth type	Ditto	of 26 parts.
	Fifth type	Ditto	of 24 parts.

CHAPTER XV

COLUMNS OF FIVE ORDERS OF SEVERAL GROUPS

Plate no.	Figure	Description
XLIV	First group	Chitra-kaṇṭha class, similar to Roman Doric in proportion;
		Whole order of 6 parts comprising:
		Pedestal 1 part.
		Base 1 part.
		Shaft 2 parts.
		Capital 1 part.
		Entablature 1 part.
		Diameter $\frac{1}{8}$th height or $\frac{1}{2}$ part.
	First and third orders	Brahma-kānta of square plan and Rudrakānta of circular or sixteen-sided plan.
	Second order	Vishṇu-kānta of octagonal plan.
	Fifth order	Skanda-kānta of hexagonal plan.
	Fourth order	Śiva-kānta of pentagonal plan.
XLV	Second group	Padma-kānta class, similar to Ionic order in proportion;
	Third group	Chitra-skambha class, similar to Corinthian order in proportion;
		Whole order of 6 parts comprising:
		Pedestal 1 part.
		Base 1 part.
		Shaft 2 parts.
		Capital 1 part.
		Entablature 1 part.
		Diameter of Padma-kānta $\frac{1}{6}$th height.
		Diameter of Chitra-skambha $\frac{1}{10}$th height.

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Plate no.	Figure	Description
XLV	First and third orders	Brahma-kānta of square plan and Rudrakānta of circular or sixteen-sided plan.
	Second order	Vishṇu-kānta of octagonal plan.
	Fifth order	Skanda-kānta of hexagonal plan.
	Fourth order	Śiva-kānta of pentagonal plan.
	Fifth order	Chitra-skambha of square, circular, sixteen-sided, octagonal, hexagonal, or pentagonal plan.
XLVI	Fourth group	Pālikā-stambha class. Whole order of 6 parts comprising : Pedestal 1 part. Base 1 part. Shaft 2 parts. Capital 1 part. Entablature 1 part. Diameter $\frac{1}{11}$th height.
	First and third orders	Brahma-kānta of square plan and Rudra-kānta of circular or sixteen-sided plan.
	Second order	Vishṇu-kānta of octagonal plan.
	Fifth order	Skanda-kānta of hexagonal plan.
	Fourth order	Śiva-kānta of pentagonal plan.
XLVII	Fifth group	Kumbha-stambha class;
	Sixth group	Koshṭha-stambha class, similar to Grecian Aṇta; Whole order of 6 parts comprising : Pedestal 1 part. Base 1 part. Shaft 2 parts. Capital 1 part. Entablature 1 part. Diameter of both $\frac{1}{12}$th height.
	First and third orders	Brahma-kānta of square plan and Rudra-kānta of circular or sixteen-sided plan.
	Second order	Vishṇu-kānta of octagonal plan.
	Fifth order	Skanda-kānta of hexagonal plan.
	Fourth order	Śiva-kānta of pentagonal plan.
	Fig. 5	Koshṭha-stambha pilaster.

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Plate no.	Figure	Description
XLVIII	Seventh group	Five other orders from Āgamas without pedestal and entablature;
		Whole order of 4 parts comprising:
		Base 1 part.
		Shaft 2 parts.
		Capital 1 part.
		Diameter $\frac{1}{6}$th height.
	First and fourth orders	Śrikara of circular plan and Priya-darśana of square plan.
	Third order	Saumukhya of octagonal plan.
	Second order	Chandra-kānta of sixteen-sided plan.
	Fifth order	Śubhaṁkari of square, octagonal or mixed plan.
XLIX	Eighth group	Five other orders from Purāṇas and Bṛihat-saṁhitā;
		Whole order of $10\frac{3}{4}$ parts comprising:
		Pedestal 1 part.
		Base 1 part.
		Shaft 6 parts.
		Capital 1 part.
		Entablature $1\frac{3}{4}$ parts.
	First and fifth orders	Ruchaka of square plan and Vritta of circular plan.
	Second order	Vajra of octagonal plan, similar to Tuskan order in proportion.
	Third order	Dvi-vajra of sixteen-sided plan.
	Fourth order	Pralinaka of thirty-two-sided plan.

CHAPTER XVI

ENTABLATURES OF EIGHT TYPES AND ROOFS OF FIVE TYPES

Plate no.	Figure	Description
L		ENTABLATURES
	First type	of 27 parts.
	Second type	of $34\frac{1}{2}$ parts.
	Third type	of $36\frac{1}{2}$ parts.
	Fourth type	of $30\frac{1}{2}$ parts.
	Fifth type	of $30\frac{1}{2}$ parts.
	Sixth type	of 29 parts.
	Eighth type	of 34 parts.

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Plate no	Figure	Description
		Not illustrated
	Seventh type	of 26 parts.
		ROOFS
	First type	Flat roof of quadrangular and other shapes.
	Second type	Pent roof of various shapes.
	Third type	Spherical roof of various shapes.
	Fourth type	Oval roof of various shapes.
	Fifth type	Round roof of various shapes.

CHAPTER XVII

JOINERY OF EIGHTEEN TYPES

Plate no.	Figure	Description
L1	First type	Joint between horizontal and vertical pieces on the middle of the latter.
	Second type	Nandyāvarta order.
	Third type	Sarvatobhadra order.
	Fourth type	Svastika order.
	Fifth type	Malla-bandha (A) or Nalyed joint.
	Sixth type	Malla-bandha (B) or Scarfed joint.
	Seventh type	Mahāvṛitta joint of Mesha-yuddha type.
	Eighth type	Meshā-yuddha or Mortise and Tenon joint.
	Ninth type	Śūkara-ghrāṇa joint.
	Tenth type	Joints in frieze.
		Not illustrated
	Eleventh type	Malla-bandha joint between two pieces of wood looking like two wrestlers wrestling against each other.
	Twelfth type	Brahma-rāja joint between three and four pieces of wood having four heads like the four-headed deity Brahmā.
	Thirteenth type	Veṇu-parva joint between five pieces of bamboos.
	Fourteenth type	Pūga-parva joint between six pieces of wood like areca or betel-nut joints.

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Plate no.	Figure	Description
	Fifteenth type	Deva-sandhi joint between seven pieces of wood.
	Sixteenth type	Ṛishi-sandhi joint between eight pieces of wood.
	Seventeenth type	Ishu-parva joint between nine pieces of wood looking arrow-shaped.
	Eighteenth type	Daṇḍika joint between ten or more pieces of wood.

CHAPTER XVIII

GENERAL FEATURES OF EDIFICES

Not illustrated but employed

Plate no.	Figures	Description
	Porches	Several varieties.
	Domes	Several varieties.
	Dome-nails	Several varieties.
	Three main styles	Nāgara, Vesara, Ḍrāvida : depending on the shape of upper portions.
	Three groups	Śuddha, Miśra, Saṁkīrṇa : depending on materials.
	Four classes	Jāti, Chhanda, Vikalpa, Ābhāsa : depending on units of measurement.
	Three postures	Sthānaka, Asāna, Śayana : depending on postures of images in case of temples.
	Three standards	Saṁchita, Asaṁchita, Apasaṁchita : depending on height, breadth, or length as the regulator of the whole structure.
	Three sexes	Puṁliṅga or masculine, Strīliṅga or feminine, Napuṁsaka or neuter : depending on equiangular or rectangular shape, but in case of temples on the sexes of the deities in addition to shapes.
	Five shapes	Square, octagonal, oval, round, circular.
	Three sizes	Large, intermediate, small.

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CHAPTER XIX

SINGLE STOREY BUILDINGS OF EIGHT TYPES

Plate no.	Figure	Description
LII	First type	Vaijayantika, of small proportion, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth.
LIII	First type	Typical plan.
LIV	Second type	Bhoga, of small proportion, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth
LV	Third type	Śrīviśāla, of intermediate proportion, used both as temples and dwelling houses with slight alteration. Elevation towards the breadth.
LVI	Eighth type	Keśara, of large proportion, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth.
LVII	Eighth type	Cross-section.
		Not illustrated
	Fourth type	Svasti-bandha, used both as temples and dwelling-houses.
	Fifth type	Śrīkara, used both as temples and dwelling-houses.
	Sixth type	Hasti-pṛishṭha, used both as temples and dwelling-houses.
	Seventh type	Skanda-tāra, used both as temples and dwelling houses.

CHAPTER XX

TWO-STOREYED BUILDINGS OF EIGHT TYPES

Plate no.	Figure	Description
LVIII	First type	Śrīkara, of small size, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth.
LIX	First type	Of intermediate size, elevation towards the breadth.

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Plate no.	Figure	Description
LX	First type	Typical plan based on intermediate size.
LXI	First type	Large size, elevation towards the breadth.
LXII	First type	Cross-section based on large size.
		Not illustrated
	Second type	Vijaya, used both as temples and dwelling-houses.
	Third type	Siddha, used both as temples and dwelling-houses.
	Fourth type	Paushṭika, used both as temples and dwelling-houses.
	Fifth type	Kānti, used both as temples and dwelling-houses.
	Sixth type	Prabhūta, used both as temples and dwelling-houses.
	Seventh type	Svastika, used both as temples and dwelling-houses.
	Eighth type	Pushkala, used both as temples and dwelling-houses.

CHAPTER XXI

THREE-STOREYED BUILDINGS OF EIGHT TYPES

Plate no.	Figure	Description
LXIII	Third type	Sukhālaya, of small size, used both as temples and dwelling-houses. Elevation towards the breadth.
LXIV	Eighth type	Kailāśa, of intermediate size, used both as temples and dwelling-houses. Elevation towards the breadth.
LXV	Second type	Āsana, of large size, used both as temples and dwelling-houses. Elevation towards the breadth.
LXVI	Second type	Cross-section based on large size.
LXVII	Second type	Typical plan (ground floor) based on large size.

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Plate no.	Figure	Description
		Not illustrated
	First type	Śrīkara, used both as temples and dwelling-houses.
	Fourth type	Kesara, used both as temples and dwelling-houses.
	Fifth type	Kamalāṅga, used both as temples and dwelling-houses.
	Sixth type	Brahmakānta, used both as temples and dwelling-houses.
	Seventh type	Merukānta, used both as temples and dwelling-houses.

CHAPTER XXII

FOUR-STOREYED BUILDINGS OF EIGHT TYPES

Plate no.	Figure	Description
LXVIII	First type	Vishṇu-kānta, of small size, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth.
LXIX	Fourth type	Rudra-kānta, of intermediate size, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth.
LXX	Fourth type	Cross-section, based on intermediate size.
LXXI	Fourth type	Typical plan (ground floor), based on intermediate size.
LXXII	Second type	Chaturmukha, of large size, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth.
		Not illustrated
	Third type	Sadāśiva, used both as temples and dwelling-houses.
	Fifth type	Īśvara-kānta, used both as temples and dwelling-houses.
	Sixth type	Mañcha-kānta, used both as temples and dwelling-houses.
	Seventh type	Vedi-kānta, used both as temples and dwelling-houses.
	Eighth type	Indra-kānta, used both as temples and dwelling-houses.

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CHAPTER XXIII

FIVE-STOREYED BUILDINGS OF NINE TYPES

Plate no.	Figure	Description
LXXIII	First type	Airāvata, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth.
LXXIV	First type	Cross-section.
LXXV	First type	Typical plan (ground floor).
		Not illustrated
	Second type	Bhūta-kānta, used both as temples and dwelling-houses.
	Third type	Viśva-kānta, used both as temples and dwelling-houses.
	Fourth type	Mūrti-kānta, used both as temples and dwelling-houses.
	Fifth type	Gṛiha-kānta, used both as temples and dwelling-houses.
	Sixth type	Mahā-kānta, used both as temples and dwelling-houses.
	Seventh type	Kalyāṇa, used both as temples and dwelling-houses.
	Eighth type	Yajña-kānta, used both as temples and dwelling-houses.
	Ninth type	Brahma-kānta, used both as temples and dwelling-houses.

CHAPTER XXIV

SIX-STOREYED BUILDINGS OF THIRTEEN TYPES

Plate no.	Figure	Description
LXXVI	First type	Padma-kānta, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth.
LXXVII	First type	Cross-section.
LXXVIII	First type	Typical plan (ground floor).

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Plate no.	Figure	Description
		Not illustrated
	Second type	Kāntāra, used both as temples and dwelling-houses.
	Third type	Sundara, used both as temples and dwelling-houses.
	Fourth type	Upakānta, used both as temples and dwelling-houses.
	Fifth type	Kamalāksha, used both as temples and dwelling-houses.
	Sixth type	Ratna-kānta, used both as temples and dwelling-houses.
	Seventh type	Vipulāṅka, used both as temples and dwelling-houses.
	Eighth type	Jyotishkānta, used both as temples and dwelling-houses.
	Ninth type	Saroruha, used both as temples and dwelling-houses.
	Tenth type	Vipulākṛitika, used both as temples and dwelling-houses.
	Eleventh type	Svasti-kānta, used both as temples and dwelling-houses.
	Twelfth type	Nandyāvarta, used both as temples and dwelling-houses.
	Thirteenth type	Ikshu-kānta, used both as temples and dwelling-houses.

CHAPTER XXV

SEVEN-STOREYED BUILDINGS OF EIGHT TYPES

Plate no.	Figure	Description
LXXIX	First type	Puṇḍarīka, used both as temples and dwelling-houses with slight alteration.
LXXX	First type	Cross-section.
LXXXI	First type	Typical plan (ground floor).

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Plate no.	Figure	Description
		Not illustrated
	Second type	Śrīkānta, used both as temples and dwelling-houses.
	Third type	Śrībhoga, used both as temples and dwelling-houses.
	Fourth type	Dhāraṇa, used both as temples and dwelling-houses.
	Fifth type	Pañjara, used both as temples and dwelling-houses.
	Sixth type	Āśramāgāra, used both as temples and dwelling-houses.
	Seventh type	Harmya-kānta, used both as temples and dwelling-houses.
	Eighth type	Hima-kānta, used both as temples and dwelling-houses.

CHAPTER XXVI

EIGHT-STOREYED BUILDINGS OF EIGHT TYPES

Plate no.	Figure	Description
LXXXII	First type	Bhū-kānta, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth.
LXXXIII	First type	Cross-section.
LXXXIV	First type	Plans in general:
	Fig. 1	With 17 parts } Small size of Bhū-kānta.
	Fig. 2	With 18 parts } Small size of Bhū-kānta.
	Fig. 3	With 21 parts, of the intermediate size of Svarga-kānta.
	Fig. 4	With 22 parts, of the large size of Mahā-kānta.
		Not fully illustrated
	Second type	Bhūpa-kānta, used both as temples and dwelling-houses.
	Third type	Svarga-kānta, used both as temples and dwelling-houses.

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Plate no.	Figure	Description
	Fourth type	Mahā-kānta, used both as temples and dwelling-houses.
	Fifth type	Jana-kānta, used both as temples and dwelling-houses.
	Sixth type	Tapas-kānta, used both as temples and dwelling-houses.
	Seventh type	Satya-kānta, used both as temples and dwelling-houses.
	Eighth type	Deva-kānta, used both as temples and dwelling-houses.

CHAPTER XXVII

NINE-STOREYED BUILDINGS OF SEVEN TYPES

Plate no.	Figure	Description
LXXXV	First type	Saura-kānta, used both as temples and dwelling-houses. Elevation towards the breadth.
LXXXVI	First type	Cross-section.
LXXXVII	First type	Plans in general :
	Fig. 1	With 20 parts, of small size of Saura-kānta.
	Fig. 2	With 27 parts, of large size of Viśva-kānta.
	Fig. 3	With 24 parts, of intermediate size of Vivṛita.
		Not fully illustrated
	Second type	Raurava, used both as temples and dwelling-houses.
	Third type	Chaṇḍita, used both as temples and dwelling-houses.
	Fourth type	Bhūshaṇa, used both as temples and dwelling-houses.
	Fifth type	Vivṛita, used both as temples and dwelling-houses.
	Sixth type	Suprati-kānta, used both as temples and dwelling-houses.
	Seventh type	Viśva kānta, used both as temples and dwelling-houses.

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CHAPTER XXVIII

TEN-STOREYED BUILDINGS OF SIX TYPES

Plate no.	Figure	Description
LXXXVIII	First type	Bhū-kānta, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth.
LXXXIX	First type	Cross-section.
XC	First type	Plans in general.
		Not illustrated
	Second type	Chandra-kānta, used both as temples and dwelling-houses.
	Third type	Bhavana-kānta, used both as temples and dwelling-houses.
	Fourth type	Antarīksha-kānta, used both as temples and dwelling-houses.
	Fifth type	Megha-kānta, used both as temples and dwelling-houses.
	Sixth type	Abja-kānta, used both as temples and dwelling-houses.

CHAPTER XXIX

ELEVEN-STOREYED BUILDINGS OF SIX TYPES

Plate no.	Figure	Description
XCI	First type	Śambhu-kānta, used both as temples and dwelling-houses with slight alteration.
XCII	First type	Cross-section.
XCIII	Fig. 1	Small size plan, of 19 parts of Śambhu-kānta.
XXIII	Fig. 2	Intermediate size plan, of 21 parts, of Vajra-kānta.
XXIII	Fig. 3	Large size plan, of 30 parts, of Chakra-kānta.
		Not fully illustrated
	Second type	Īśa-kānta, used both as temples and dwelling-houses.
	Third type	Chakra-kānta, used both as temples and dwelling-houses.

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Plate no.	Figure	Description
	Fourth type	Yama-kānta, used both as temples and dwelling-houses.
	Fifth type	Vajra-kānta, used both as temples and dwelling-houses.
	Sixth type	Akra-kānta, used both as temples and dwelling-houses.

CHAPTER XXX
TWELVE-STOREYED BUILDINGS OF TEN TYPES AND STEPS AND STAIRCASES OF VARIOUS KINDS

Plate no	Figure	Description
XCIV	First type	Pāñchāla, used both as temples and dwelling-houses with slight alteration. Elevation towards the breadth.
XCV	First type	Cross-section.
XCVI	First type	Plans in general :
	Fig. 1	Small size, of 28 parts, of Pañchāla and Drāviḍa.
XCVI	Fig. 2	Intermediate size, of 34 parts, of Virāṭa-kānta.
XCVII	Fig. 1	Intermediate size, of 33 parts, of Madhya-kānta.
	Fig. 2	Intermediate size, of 34 parts, of Kerala-kānta.
XCVIII	Fig. 1	Intermediate size, of 33 parts, of Kāliṅga-kānta.
	Fig 2	Intermediate size, of 34 parts, of Vaṁśaka-kānta.
		Not fully illustrated
	Second type	Drāviḍa, used both as temples and dwelling-houses.
	Third type	Madhya-kānta, used both as temples and dwelling-houses.
	Fourth type	Kāliṅga-kānta, used both as temples and dwelling-houses.
	Fifth type	Virāṭa-kānta, used both as temples and dwelling-houses.

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Plate no.	Figure	Description
	Sixth type	Kerala-kānta, used both as temples and dwelling-houses.
	Seventh type	Vaṁśaka-kānta, used both as temples and dwelling-houses.
	Eighth type	Māgadha-kānta, used both as temples and dwelling-houses.
	Ninth type	Janaka-kānta, used both as temples and dwelling-houses.
	Tenth type	Sphūrjaka (? Gurjaraka), used both as temples and dwelling-houses.

STEPS AND STAIRCASES

XCIX	Figs. 1 and 2	Plans showing various positions of steps and staircases (fixed).
	Fig. 3	Side elevation.
	Figs. 4 and 5	Plans showing possible positions of movable staircases.
	Fig. 6	Section.

CHAPTER XXXI

COURTS OF FOUR CLASSES OF EDIFICES, EACH COMPRISING FIVE TO SEVEN VARIETIES, FOR OFFERINGS, FAMILY MEMBERS, BEAUTY, AND DEFENCE

Plate no.	Figure	Description
C	First type	For Jāti class of buildings, comprising five courts called Antarmaṇḍala, Antahārā, Madhyahārā, Prākāra, and Mahāmaryādā respectively.
	Second type	For Chhanda class of buildings, comprising five courts of the five epithets.
		Not illustrated
	Third type	For Vikalpa class of buildings, comprising five courts of the five epithets.
	Fourth type	For Ābhāsa class of buildings, comprising five courts of the five epithets.

N. B.—Beyond the fifth court there may be for defence the sixth and seventh varieties also (vide Translation, page 292).

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CHAPTER XXXII

SHRINES OF ATTENDANT DEITIES IN VISHṆU, BUDDHA, JAIN AND OTHER TEMPLES

Plate no.	Figure	Description
CI	Shrines	Of Vishṇu temple, comprising groups of eight, sixteen, and thirty-two deities. *Not illustrated*
	Shrines	Of Buddha temple.
	Shrines	Of Jain temple.
	Shrines	Of Śiva and other temples.

CHAPTER XXXIII

GATEHOUSES OF FIFTEEN TYPES OF ONE TO SIXTEEN STOREYS AND WINDOWS OF EIGHT TYPES

Plate no.	Figure	Description
		GATEHOUSES
CII	First type	Dvāra-śobhā (beauty of the gate) of a single storey, of Antar-maṇḍala (innermost court), both for temples and residential buildings.
	Fig. 1	Plan.
	Fig. 2	Elevation.
	Fig. 3	Cross-section.
CIII	Second type	Dvāra-śālā (gatehouse) of two storeys, of Antanihāra (second court), both for temples and residential buildings.
	Fig. 1	Plan.
	Fig. 2	Elevation.
	Fig. 3	Cross-section.
CIV	Third type	Dvāra-prāśāda (gate-palace) of three storeys, of Madhyama-hārā (third court), both for temples and residential buildings.
	Fig. 1	Plan (of first floor).
	Fig. 2	Elevation.
	Fig. 3	Cross-section.

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Plate no.	Figure	Description
CV	Fourth type	Dvāra-harmya (gate-edifice) of four storeys, of Prākāra (fourth court), both for temples and residential buildings.
	Fig. 1	Plan (of first floor).
	Fig. 2	Elevation.
	Fig. 3	Cross-section.
CVI	Fifth type	Mahāgopura (great gate-house) of five storeys, of Mahāmaryādā (extreme boundary), both for temples and residential buildings.
	Fig. 1	Plan (of first floor).
	Fig. 2	Elevation.
	Fig. 3	Cross-section.
		Not illustrated

N. B.—Each of the five types admits of three different sizes—small, intermediate and large, and may run up to sixteen storeys.

WINDOWS

CVII	First group	For Vaiśyas and Śūdras.
	Fig. 1	Elevation.
	Fig. 2	Section.
	Fig. 3	Plan.
	Second group	For temples of kings (kshatriyas) and Brahmans.
	Fig. 4	Elevation.
	Fig. 5	Section.
	Fig. 8	Plan.
	Fig. 6	Elevation.
	Fig. 7	Section.
	Fig. 9	Plan.
		Not illustrated
	First type	Nāga-bandha (snake-band).
	Second type	Valli-bandha (creeper-band).
	Third type	Govāksha (resembling cow's eye).
	Fourth type	Kuñjarāksha (resembling elephant's eye).
	Fifth type	Svastika (cross-shaped).
	Sixth type	Sarvatobhadra (*vide* plate no. XVI).
	Seventh type	Nandyāvarta (*vide* plate no. XVII).
	Eighth type	Pushpa-bandha (flower-band).
	Third group	Dormer-windows in roofs.

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CHAPTER XXXIV

PAVILIONS OF SOME HUNDRED TYPES, CLASSIFIED AS BELONGING TO TEMPLES AND RESIDENTIAL BUILDINGS OF BRAHMANS, KINGS, VAIŚYAS AND ŚŪDRAS AND IN ACCORDANCE WITH SHAPES, NUMBER OF FACES, AND NUMBER OF COLUMNS

Plate no.	Figure	Description
CVIII	First type	Himaja, with four parts square, both for temples and residential buildings, used as an ordinary bath-room.
	Second type	Nishadaja, with six parts square, both for temples and residential buildings, used as a reading-room.
	Third type	Vindhyaja, with seven parts square, both for temples and residential buildings, used as a special bath-room.
	Eighth type	Meruja, with 11 by 4 parts, both for temples and residential buildings, used as the stock-room of a library.
CIX	Eleventh type	Padmaka, with five parts square, for temples, used as refectory or kitchen for gods.
	Fourteenth type	Bhadra, with five parts square, both for temples and residential buildings, used as water-store and granary.
	Sixteenth type	Nṛitta, with 5 by 7 parts, both for temples and residential buildings, used as a music hall.
CX	Eighteenth type	Āsthāna-maṇḍapa, assembly hall, with nine parts square and with 100 columns.
	Fig. 1	Part section.
	Fig. 2	Plan.
	Fig. 4	Elevation.
	Twenty-fourth type	Kula-dhāraṇa, with 24 by 12 parts, both for temples and residential buildings, used as a cow-shed.
	Fig. 3	Plan.
CXI	Twenty-ninth type	Dhanādhipa, with plough-shaped walls, of several varieties, generally for the gods and the Brahmans, but also used as the shaving pavilion for the kings and the twice born, as well as the treasury for jewels of the Kshatriyas and Vaiśyas.

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Plate no.	Figure	Description
CXI	Thirty-seventh type	Droṇa, with 15 by 7 parts, used as a place for ram-fighting, also as the sports-pavilion for gods, as also the chapel in king's palace and for practising archery and wrestling.
	Ninth type	Vijaya, with 4 by 2 parts, used as the wedding pavilion and also as a place dedicated to gods for free distribution of water.
	Thirtieth type	Dhānyāgāra, with 10 by 3 parts, for Śūdras, used as a dwelling-house.
	Fig. 5	Treasury, with 5 by 3 parts, for Kshatriyas and others.
CXII	Nineteenth type	Deva, with a thousand columns, used as council hall of gods and kings.
	Fig. 1	Elevation.
	Fig. 2	Section.
	Fig. 3	Plan with nine parts square, excluding porches.
		Not illustrated
	Fourth type	Mālyaja, used as a chapel with the image of a deity therein.
	Fifth type	Pāriyātra, used as a temple where a deity is installed.
	Sixth type	Gandha-mādana, used as a place for pilgrimage.
	Seventh type	Hema-kūṭa, used as a place for dancing and singing.
	Tenth type	Siddha-yoga, of 192 columns.
	Twelfth type	Sicha, used as an ordinary kitchen.
	Thirteenth type	Pushpa, used as a place for collecting flowers or as a bower.
	Fifteenth type	Śiva, used as a room for unhusking corn.
	Seventeenth type	Jālaka, used as a treasury for clothes, ornaments, jewels and other valuables.
	Twentieth type	Śālā, used as a residence.
	Twenty-first type	Kṛita, used as a dwelling-house.
	Twenty-second type	Darbha, used as a stable for elephants.
	Twenty-third type	Kauśika, used as a stable for horses.
	Twenty-fifth type	Sukhāṅga, used as a guest-house.

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Plate no.	Figure	Description
	Twenty-sixth type	Saukhyaka, built on the bank of a river, lake, or sea, and used as a place for pilgrimage.
	Twenty-seventh type	Mālikā, also called Mālikākṛiti, shaped like a garland, and used as the spring residence of gods, kings, and others.
	Twenty-eighth type	Dhanada, specially for Brahmans, used as a dwelling-house.
	Thirty-first type	Bhūshaṇa with several varieties, used as a place for the silence (worship) of the gods, for the Puṁsavana ceremonies of the Brahmans, and also as the kitchen for the Śūdras.
	Thirty-second type	Subhūshaṇa, used as a hall for the Upanayana (sacred thread) ceremonies of the Brahmans, Kshatriyas and Vaiśyas.
	Thirty-third type	Harmya, with several varieties, used as the kitchen of the gods, the Brahmans and the kings, and also as the place (lying-in room) to see the newly-born baby in.
	Thirty-fourth type	Śṛiṅgāra, used as the bed chamber of the gods and others.
	Thirty-fifth type	Sugata, fit for all castes in all provinces for all purposes.
	Thirty-sixth tpye	Prāgata, suitable for all sorts of work.
	Thirty-eighth type	Kharvaṭa, of several varieties, used as the dining hall of the kings, also as the coronation hall.
	Thirty-ninth type	Śrīrūpa, generally for temples, used as the coronation hall of the kings.
	Fortieth type	Maṅgala, specially for palaces of kings, used as the place for balancing the kings (against gold which is distributed).
	Forty-first type	Kānta, used as the place to see sports from, for the Crown Prince.
	Forty-second type	Śrīviśāla, used as the residence for the queen.
	Forty-third type	Somārka, of several varieties, used as the kitchen for the Brahmans, Kshatriyas, and Vaiśyas.
	Forty-fourth type	Jāti, style of pavilions for the gods and the Brahmans.
	Forty-fifth type	Chhanda, style of pavilions for the Kshatriyas.

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Plate no.	Figure	Description
	Forty-sixth type	Vikalpa, style of pavilions for the Vaiśyas.
	Forty-seventh type	Ābhāsa, style of pavilions for the Śūdras.
	Forty-eighth type	Daṇḍaka, group of pavilions with two faces.
	Forty-ninth type	Svastika, group of pavilions with three faces and shaped like the plough.
	Fiftieth type	Nandyāvarta, group of pavilions with four faces.
	Fifty-first type	Maulika, group of pavilions with six faces.
	Fifty-second type	Sarvatobhadra, group of pavilions with eight faces.
	Fifty-third type	Grāma-maṇḍapa, pavilions for villages, square or rectangular in shape, with even or odd number of walls.
	Fifty-fourth type	Sabhā, for villages, used as the assembly hall.
	Fifty-fifth type	Nagara-maṇḍapa, pavilions for the cities.
	Fifty-sixth type	Pattana-maṇḍapa, pavilions for towns on the bank of a river or sea.
	Fifty-seventh type	Kharvaṭa-maṇḍapa, pavilions in small towns for the Śūdras.
	Fifty-eighth type	Yātrā-mārga-maṇḍapa, pavilions or sheds on the road-side, used as the rest-house for travellers.
		Pavilions also mentioned in other chapters and used as stated below:
	Fifty-ninth type	For besmearing oil in (*vide* Translation, p. 401).
	Sixtieth type	For cock-fight in palaces (p. 430).
	Sixty-first type	In front of mansions (p. 382).
	Sixty-second type	For installation of the bull (p. 593).
	Sixty-third type	For keeping clothes in (p. 296).
	Sixty-fourth type	For preparing dishes in (p. 296).
	Sixty-fifth type	For gathering flowers in (p. 296).
	Sixty-sixth type	For keeping jewels in (p. 297).
	Sixty-seventh type	For music (p. 402).
	Sixty-eighth type	For keeping perfumes, etc. (p. 297).
	Sixty-ninth type	For making flower garlands in (p. 297).
	Seventieth type	For keeping ornaments of gods (pp. 297-8).
	Seventy-first type	For keeping umbrellas and chowries (p. 298).

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Plate no.	Figure	Description
	Seventy-second type	For seeing the military march from (p. 431).
	Seventy-third type	For unhusking rice (p. 402).
	Seventy-fourth type	For wedding (p. 401), a secord variety.
	Seventy-fifth type	For performing sacrifice, built in front or sides of temples, square in shape, with twelve or sixteen columns, one pinnacle, a shed-yard, four doors and arches, and an altar in.

CHAPTER XXXV

STOREYED MANSIONS OF SIX TYPES, EACH COMPRISING SEVERAL VARIETIES, RUNNING UP TO TWELVE STOREYS, BUILT FOR THE SAKE OF BEAUTY, HEALTH AND ENJOYMENT OF THE GODS, KINGS, AND OTHERS

Plate no.	Figure	Description
CXIII	First type	Daṇḍaka, an isolated mansion comprising a single row of buildings, used generally by the Pārshṇika, the Maṇḍaleśa and the inferior classes of kings.
	Fig. 1	First variety (Daṇḍaka-śālā).
	Fig. 2	Third variety (Daṇḍaka-kānta).
	Figs. 3 to 6	Plans showing various positions of doors.
	Fig. 7	Second variety (Paṇḍi-śālā).
	Fig. 8	Fourth variety (Daṇḍaka-śālā).
	Fig. 9	Fifth variety (Daṇḍaka-śālā).
CXIV	Second type	Svastika, plough-shaped, comprising two rows of buildings, used generally by the Paṭṭadhara and other inferior classes of kings.
	Fig. 2	Plan of the ground floor.
	Third type	Maulika, shaped like the winnowing basket, comprising three rows of buildings, used generally by the Maṇḍaleśa (Pārshṇika) and other inferior classes of kings.
	Fig. 1	Plan of the ground floor.
CXV	Fourth type	Chaturmukha, comprising four rows of buildings, used generally by the Narendra and other inferior classes of kings.

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Plate no.	Figure	Description
	Fig. 1	Plan of the ground floor.
	Fifth type	Sarvatobhadra, comprising seven rows of buildings, used generally by the Adhirāja (Mahārāja) and other inferior classes of kings.
	Fig. 2	Plan of the ground floor.
CXVI	Sixth type	Vardhamāna, comprising ten rows of buildings, used generally by the Chakravartin and other inferior classes of kings.
	Fig. 1	First variety (plan of the ground floor).
	Fig. 2	Third variety (plan of the ground floor).

CHAPTER XXXVI

SITUATION, ETC., OF DWELLING-HOUSES

Not illustrated

CHAPTER XXXVII

SITUATION OF DOORS IN TEMPLES AND RESIDENTIAL BUILDINGS

Not illustrated

CHAPTER XXXIX

DOORS OF VARIOUS TYPES

Plate no.	Figure	Description
CXVII	First type	Small size, of rectangular shape.
	Fig. 1	Elevation.
	Fig. 2	Section.
	Fig. 3	Plan.
CXVIII	Second type	Intermediate size, of rectangular shape.
	Fig. 1	Elevation.
	Fig. 2	Section.
	Fig. 3	Plan.
CXIX	Third type	Large size, of rectangular shape.
	Fig. 1	Elevation
	Fig. 2	Section.
	Fig. 3	Plan.

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Plate no.	Figure	Description
		Not illustrated
	Fourth type	Square shape, of various sizes Translation, p. 417).
	Fifth tpye	Gutter, of circular and oth r shapes, of various sizes (p. 232).
	Sixth type	Horse pattern, of various sizes (p. 359).
	Other types	Of houses for all (pp. 402, 404, 410), of temples (p. 410), of Jain temples (p. 564), of main building (p. 407), in mansions (pp. 376, 396), in different storeys (pp. 230, 231, 243, 252, 270, etc.), of pavilions (pp. 234, 235, 342, 410, 642, etc.), in auxiliary temples (p. 292), of courts (p. 410), according to castes (p. 292), in palaces (pp. 410, 427), at roofs (p. 410), at the wall (p. 325), for swings (p. 507), of temples (p. 600), of tiger cages (p. 512), with panels (pp. 216, 231), with single panel (p. 512), with leaf (pp. 419-421), etc.

CHAPTER XL

ROYAL PALACES OF NINE TYPES, EACH COMPRISING NINE VARIETIES

Plate no.	Figure	Description
CXX	First type	For Astra-grāha kings, Plan of the ground floor
CXXI	Fourth type	For Maṇḍaleśa kings, Plan of the ground floor.
CXXII	Sixth type	For Pārshṇika kings, Plan of the ground floor.
CXXIII	Eighth type	For Mahārāja kings, Plan of the ground floor.
CXXIV	Ninth type	For Chakravartin kings, Plan of the ground floor.
		Not illustrated
		Elevations of the above types.
	Second type	For Prāhāraka kings.
	Third type	For Paṭṭabhāj kings.
	Fifth type	For Paṭṭadhara kings.
	Seventh type	For Narendra kings.

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CHAPTER XLIII

CARS AND CHARIOTS OF SEVEN MAIN TYPES AND FIVE STYLES, COMPRISING SEVERAL VARIETIES AND RUNNING UP TO NINE STOREYS, FOR GODS, BRAHMANS, AND KINGS, FOR BATTLE, MOCK-FIGHTING, DAILY RIDES, USE DURING FESTIVALS, ETC.

Plate no	Figure	Description
CXXV	Fig. 1	Of single-storey, Plan of the ground floor.
	Fig. 2	Outline section.
	Fig. 3	Front elevation.
	Fig. 4	Side elevation.
CXXVI	Fig. 1	Two-storeyed, Plan of the ground floor.
	Fig. 2	Outline section.
	Fig. 3	Front elevation.
	Fig. 4	Side elevation.
		Not illustrated
		Cars and chariots of three, four, five, six, seven, eight, and nine storeys.
	First type	Nabhasvän-bhadraka, of circular shape, furnished with square porticos and other features.
	Second type	Prabhañjana-bhadraka, of elliptical shape, furnished with hexagonal porticos and other features.
	Third type	Nivāta-bhadraka, of square shape, furnished with two-sided porticos and other features.
	Fourth type	Pavana-bhadraka, of rectangular shape, furnished with three-sided porticos and other features.
	Fifth type	Prishata-bhadraka, of octagonal shape, furnished with decagonal porticos and other features.
	Sixth type	Indraka-bhadraka, of hexagonal shape, furnished with decagonal porticos and other features.
	Seventh type	Anila-bhadraka, of oval shape, furnished with twelve-sided porticos and other features.
	Eighth variety	Nāgara style, of square shape.
	Ninth variety	Drāviḍa style, of octagonal shape.
	Tenth variety	Vesara style, of circular shape.
	Eleventh variety	Āndhra style, of hexagonal shape.

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Plate no.	Figure	Description
	Twelfth variety	Kāliṅgaka style, of equiangular shape.
	Thirteenth variety	Divine cars, with one, two, or three storeys.
	Fourteenth variety	Royal cars, with one to nine storeys.
	Fifteenth variety	Battle-chariots, with three platforms.
	Sixteenth variety	Chariots for Mock-fight, with two platforms.
	Seventeenth variety	Chariots for daily ride, with one, two, or three platforms.
	Eighteenth variety	Chariots for special use, with three to nine platforms.
	Nineteenth variety	Chariots for Sārvabhauma kings, with one to nine platforms.
	Twentieth variety	Chariots for Mahārāja kings, with one to seven platforms.
	Twenty-first variety	Chariots for Narendra kings, with one to five platforms.
	Twenty-second variety	Chariots for Pārshṇika kings, with one to four platforms.
	Twenty-third variety	Chariots for Vishṇu, with one to nine platforms.
	Twenty-fourth variety	Chariots for Śiva, with one to nine platforms.
	Twenty-fifth variety	Chariots for Buddhists, with one to seven platforms.
	Twenty-sixth variety	Chariots for Jains, with one to seven platforms.
	Twenty-seventh variety	Chariots for other gods and goddesses, with one to four or five platforms.

CHAPTER XLIV

COUCHES, BEDSTEADS, AND SWINGS OF SEVERAL TYPES

Plate no.	Figure	Description
CXXVII	First type	Bedsteads for gods.
	Fig. 1	Elevation.
	Fig. 2	Section.
	Fig. 3	Plan.

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Plate no.	Figure	Description
CXXVII	Second type	Bedsteads for children.
	Fig. 4	Elevation.
	Fig. 5	Part section.
	Fig. 8	Plan.
	Third type	Bedsteads for Brahmans.
	Fig. 6	Part elevation.
	Fig. 7	Part section.
	Fig. 9	Plan.

Not illustrated

Couches of quadrangular, rectangular, and circular cane patterns (Translation, p. 453).

Vajra-pāda and Padma-pāda types (p. 453), lion-legged for kings, other kinds for Kshatriyas and others covered with canopies (p. 501); Divan, Āsandi, sofa with arms to it, state chairs, cushioned chairs, chair raised on a pedestal, chair with many legs, cane-bottomed chair, leaning board, etc. (p. 501).

Swings—*vide* plate no. CXLIV.

CHAPTER XLV

THRONES (ARCHITECTURAL), FOR GODS AND KINGS, OF EIGHTEEN KINDS WITH TEN GENERAL TYPES, FOUR SPECIAL TYPES FOR GODS, AND FOUR SPECIAL TYPES FOR KINGS

Plate no.	Figure	Description
CXXVIII	First group	For gods, Śiva and Vishṇu.
	Fig. 1	Elevation (architectural, of Padmāsana type).
	Fig. 4	Plan (of the same).
	Fig. 2	Section (of Mahotsava type).
	Fig. 3	Elevation (of the same).
	Fig. 5	Plan (of the same).
CXXIX	Second group	For higher order of kings such as Chakravartin and others.
	Fig. 1	Elevation.
	Fig. 2	Plan.
	Fig. 3	Section.

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Plate no.	Figure	Description
CXXX	Third group	For lower order of kings such as Mandaleśa and others.
	Fig. 1	Plan.
	Fig. 2	Elevation.
	Fig. 3	Section.
	Fourth group	Conopied seat.
	Fig. 4	Elevation.
	Fig. 5	Plan.
	Fig. 6	Section.

Not fully illustrated

First type	Prathama thrones, for the first stage of coronation of the kings.
Second type	Maṅgala thrones, for the second stage of coronation of the kings.
Third type	Vira thrones, for the third stage of coronation of the kings.
Fourth type	Vijaya thrones, for the concluding stage of coronation of the kings.
Fifth type	Nityārchana thrones, for the daily worship of the gods.
Sixth type	Nityotsava thrones, for the ordinary festival of the gods.
Seventh type	Viśesha thrones, for the special use of the gods.
Eighth type	Mahotsava thrones, for the great festival of the gods.
Ninth type	Padmāsana, for gods Śiva and Vishṇu and the Chakravartin order of kings (for sculptural illustration (*vide* plate no. CXXXVI).
Tenth type	Padma-keśara, for the gods and the Chakravartin and other kings (*vide* plate no. CXXXVII).
Eleventh type	Padma-bhadra, for the Adhirāja class of kings.
Twelfth type	Śrī-bhadra, for all purposes of the Adhirāja and Narendra classes of kings.
Thirteenth type	Śrī-viśāla, for all purposes of the Narendra and Pārshṇika classes of kings.
Fourteenth type	Śrī-bandha, for all purposes of the Pārshṇika and Paṭṭadhara classes of kings.

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Plate no.	Figure	Description
	Fifteenth type	Śrī-mukha, for all purposes of the Maṇḍaleśa class of kings.
	Sixteenth type	Bhadrāsana, for all purposes of the Paṭṭabhāj class of kings.
	Seventeenth type	Padma-bhadra (bandha), for all purposes of the Prāhārāka class of kings.
	Eighteenth type	Pāda-bandha, without lion-legs, for all purposes of the Astrgrāha class of kings.

N.B.—For the sculptural illustration of Padmāsana and Padmakesara (*vide* plates nos. CXXXVI and CXXXVII).

CHAPTER XLVI

ARCHES OF NINE TYPES WITH SEVERAL VARIETIES FOR TEMPLES, PALACES, RESIDENTIAL BUILDINGS, PAVILIONS, THRONES, BALANCES, ETC.

Plate no.	Figure	Description
CXXXI	First group	Simple varieties based on geometrical patterns :
	Third type	Crescent-shaped.
	Fifth type	Bow-shaped.
	Fourth type	Triangular.
	First type	Circular.
	Second type	Hexagonal.
CXXXII	Second group	Decorative varieties based on special ornamentation :
	Seventh type	Pushpa-toraṇa or flower pattern.
	Sixth type	Patra-toraṇa or leaf pattern.
	Ninth type	Chitra-toraṇa or variegated pattern.
	Eighth type	Ratna-toraṇa or jewel pattern.
CXXXIII	Third group	Makara-toraṇa or shark pattern (from Suprabhedāgama).
	Fourth group	Kumbha-toraṇa or jug-pattern (from Rāmāyaṇa).

CHAPTER XLVII

THE CENTRAL THEATRE

Plate no.	Figure	Description
CXXXIV	Theatre	Sectional elevation.
	Fig. 2	Plan (of the ground floor).

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CHAPTER XLVIII

THE ORNAMENTAL TREE

Plate no.	Figure	Description
CXXXV	Tree	For decoration of thrones for gods and kings, and for the Jains (Translation, pp. 563, 565).

CHAPTER XLV

THRONES (SCULPTURAL), FOR GODS AND KINGS AND THEIR CONSORTS, OF EIGHTEEN KINDS VARYING IN SIZE, PLAN, AND ORNAMENTS

Plate no.	Figure	Description
CXXXVI	Ninth type	Padmāsana, for details *see* page 43 above.
CXXXVII	Tenth type	Padmakesara, for details *see* page 45 above.

N.B.—For descriptions of these eighteen thrones *see* pp. 45—46 above.

CHAPTER XLIX

CROWNS FOR GODS, KINGS AND THEIR CONSORTS, OF FOURTEEN KINDS VARYING IN SIZE, PLAN, AND ORNAMENTS

Plate no.	Figure	Description
CXXXVIII	First type	Jaṭā, triangular in plan, decorated with various ornaments, for Brahmā, Rudra, Love-goddess, Brahmāṇī, Chāmuṇḍī, and others.
CXXXIX	Second type	Mauli, of ear-like plan, decorated with various ornaments, for Mana-unmādinī (enchantress of the mind).
CXL	Sixth type	Kuntala, of triangular plan, decorated with various ornaments for Mana-unmādinī (enchantress of the mind), Sarasvatī, Sāvitrī, Earth-goddess, Love-goddess and the queen of the Chakravartin king.
		Not illustrated
	Third type	Kirīṭa, of ear-like plan, decorated with various ornaments, for Nārāyaṇa, Vishṇu, the Chakravartin, Adhirāja, Mahārāja classes of kings and for Tārakā, Vārāhi, and Vaishṇavī.

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Plate no.	Figure	Description
	Fourth type	Karaṇḍa, of peacock's beak-like plan, decorated with various ornaments, for inferior gods, for female deities (Durgā, Earth-goddess, Kaumārī, Lakshmī, Sarasvatī, Sāvitrī, etc.), for mythical beings (Yakshas, Vidyādharas, Gandarvas, Kinnaras, Rākshasas, Nīgrahas etc.), for Dauvārika, Sugrīva, Pushpadanta, for Garuḍa and for the Chakravartin, Narendra, Mahendra and other classes of kings.
	Fifth type	Śirastraka, of bubble plan, decorated with various ornaments and gold pieces, for the Pārshṇika class of kings.
	Seventh type	Keśabandha, of triangular plan, decorated with various ornaments, for the goddesses, Sarasvatī, Sāvitrī, Durgā, Lakshmī, and for the Adhirāja and Narendra classes of kings and their queens.
	Eighth type	Dhammilla, of creeper plan, decorated with various ornaments, for the queens of the Pārshṇika, Paṭṭadhara, Maṇḍaleśa and Paṭṭabhāj classes of kings.
	Ninth type	Alaka, of ear-like plan, decorated with various ornaments, for Bhairavī, and for the queens of the Prāhāraka and Astragrāha classes of kings.
	Tenth type	Chūḍaka, of cock's crest-like plan, decorated with various ornaments, for the queens of the Prāhāraka and Astragrāha classes of kings.
	Eleventh type	Mukuṭa, of triangular plan, marked with the crescent moon and the sun, decorated with various ornaments and gold pieces, for Brahmā, Rudra, Nārāyaṇa, Śiva, Vishṇu, for inferior gods (Dauvārika, etc.), for Manaunmādini and all other female deities, for the Chakravartin and other classes of kings, for the queens of Chakravartin, Pārshṇika, Paṭṭadhara, Maṇḍaleśa and Paṭṭabhaj kings.
	Twelfth type	Patra-paṭṭa, of ploughshare shape, decorated with various ornaments and gold pieces, for the Paṭṭadhara class of kings.
	Thirteenth type	Ratna-paṭṭa, of ploughshare shape, marked with the nine gems and decorated with various ornaments and gold pieces, for Pārshṇika and Maṇḍaleśa kings.

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Plate no.	Figure	Description
	Fourteenth type	Pushpa-paṭṭa, of quadrangular or circular plan, decorated with various ornaments, gold pieces, and flowers, for the Paṭṭabhāj class of kings.

N.B.—Petty kings are not allowed to put on a real crown; they wear garlands in place of the crown.

CHAPTER I.

ORNAMENTS OF FOUR GROUPS OF SOME THIRTY TYPES AND FURNITURE OF EIGHT GROUPS, COMPRISING SEVERAL VARIETIES

Plate no.	Figure	Description
		ORNAMENTS
CXLI	First type	Hāra (chain), of 108 or 64 strings, worn round the neck, suspending down to the heart.
CXLII	Special group	Suvarṇa-kañchuka (cuirass or bodice) worn round the breast (taken from the other texts).
		Not illustrated
	First group	Patra-kalpa, adorned with leaves and creepers, for the gods and the Sārvabhauma class of kings.
	Second group	Chitra-kalpa, adorned with leaves, creepers, paintings, all jewels and calyxes, for the gods and the Chakravartin class of kings.
	Third group	Ratna-kalpa, adorned with flowers and jewels, for the gods and the Adhirāja and Narendra classes of kings.
	Fourth group	Miśra-kalpa, adorned with leaves and jewels, for the gods and the Adhirāja, Narendra and all other kings.
	Second type	Pendant, Skandhamālā-avalambana, suspended from the root of the arm and connected with the Keyura and Kaṭaka armlets.
	Third type	Mid-armlets, Keyura and Kaṭaka.
	Fourth type	Upper-armlets, Supurīma.
	Fifth type	String-armlets, Valaya-dāman.
	Sixth type	Wrist-bangle, Prakoshṭha-valaya.
	Seventh type	String-bracelets, Maṇibandha-kalāpaka.

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Plate no.	Figure	Description
	Eighth type	Jewelled rings for fingers except the middle one.
	Ninth type	Breast-string (Brassiere), Stana-sūtra.
	Tenth type	Belly-band, Udara-bandha.
	Eleventh type	Chain, worn on the side of the sacred thread covering the breasts.
	Twelfth type	Front string, Pura-sūtra, suspended from where the sacred thread is tied down to the hip-chain.
	Thirteenth type	Hip-chain, Kaṭi-sūtra, worn round the waist.
	Fourteenth type	Armlet, Valaya, put around the root of the arm.
	Fifteenth type	String bracelet, Dāman, worn round the arm-pits.
	Sixteenth type	Belt, Paṭṭikā, put along the breadth of the hip-chain and round the knee-cap.
	Seventeenth type	Lion-face, put covering the sex-organ.
	Eighteenth type	Jewelled band, put covering the sex-organ.
	Nineteenth type	Five saphires, suspended with chains along the waist.
	Twentieth type	Net-ornaments, Jāla, for the feet.
	Twenty-first type	Silk-cloth, suspending down to the ankle.
	Twenty-second type	Skin, worn down to the knee.
	Twenty-third type	Bark, worn down to the knee.
	Twenty-fourth type	Skirt, worn down to the knee.
	Twenty-fifth type	Chinnavīra (or Chhannavīra), bodice, passing over both shoulders and hips, crossing and fastening in the middle of the breast and the back.
	Twenty-sixth type	Vana-mālā, garland worn round the neck.
	Twenty-seventh type	Serpent-belt, Kaṭaka, worn above the ankle.
	Twenty-eighth type	Anklets, Nūpura, for the feet.

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Plate no.	Figure	Description
	Twenty-ninth type	Ear-rings, Makara, crocodile shaped.
	Thirteenth type	Gold rings, Tāṭaṅka, for the ears.
		FURNITURE
(XLIII	Fourth group	Mañjushā, basket, made of leaf, wood, etc., decorated with several ornaments, used as wardrobe, oil-tank, trunk, etc.
CXLIV	Fifth group	Dolā, swing or palanquin, consisting of pillars, walls, iron rings, transom, board, mirrors, portico, doors, etc., for the use of the gods and men.
		Not illustrated
	First group	Dīpa-daṇḍa, lamp-post, made of wood, metals, and stone, movable and stationary, erected in front of the house and elsewhere.
	Second group	Vyajana, fan, furnished with posts made of wood or iron, leather chain, ornaments, etc., surfaces decorated with images of gods and inscribed with colours and metallic substances, used in cars, chariots and elsewhere.
	Third group	Darpaṇa, mirror, generally circular or lotus pattern, made of wooden or metal post, brass board, handle and other members, varying, according to castes, used as an attribute of the goddess of learning (Sarasvatī) and an ornament for doors, for cars and chariots, for decoration of buildings, for porticos or swings, for royal umbrellas, and fixed on crowns, etc.
	Sixth group	Tulā, balance, made of wood and metals, consisting of scale beam, scale pans, tongue, pivot, bar-like chains and other members, used also for the kings to be weighed against gold to be distributed, varying according to the nine classes of kings.
	Seventh group	Patra, seal, of leaf-pattern, imprinted with the palm-print of the right hand of the kings and well marked with gold lines, including a pen for marking the commencement of the new year, and varying according to the (nine) ranks of kings.

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Plate no.	Figure	Description
	Eighth group	Pañjara, cages and nests, movable and stationary, made of suitable materials and necessary members, for the use of the musk deer (cat), the parrot, the Chātaka bird, the Chakora bird, the duck, the pigeon, the peacock, the francoline partridge, the wag-tail, the cock, the mongoose, the sparrow, the boar, the tiger, etc.

N.B—The bigger articles of furniture are separately described: cars and chariots (Chapter XLIII), bedsteads and couches (Chapter XLIV), and seats and thrones (Chapter XLV), of which the following are further varieties more fully described in other texts:

Ninth group	Benches—To accommodate three persons.
Tenth group	Couches—Covered with canopies.
Eleventh group	Chairs—Rectangulār, cushioned, cane-bottomed.
Twelfth group	Sofa—Raised on a pedestal, with many legs, state, etc., with arms to it.
Thirteenth group	Carpets—Of various tpyes, inwrought with gold or with silk.
Fourteenth group	Rugs—Of various kinds, including horse-rugs and carriage-rugs, with long hair on one or both sides.
Fifteenth group	Curtains—Of various patterns and materials.
Sixteenth group	Counterpanes—Of many colours.
Seventeenth group	Coverlets—With long fleece, woollen marked with thick flowers, cotton dyed with figures of animals.
Eighteenth group	Matresses—Of various kinds.
Nineteenth group	Pillows—Of the size of man's head and body.
Twentieth group	Bolsters—Of five kinds as stuffed with wool, cotton, bark, grass, and leaves.
Twenty-first group	Elephant housings—Richly decorated and of various kinds.
Twenty-second group	Skins—Of panthers, antelope, etc.
Twenty-third group	Cushions—Large, crimson and of other kinds.
Twenty-fourth group	Mosquito-curtains—Of various sizes and colours.
Twenty-fifth group	Spittoon—Of various kinds.

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CHAPTER LI

THE TRIAD, COMPRISING BRAHMĀ, VISHṆU, AND ŚIVA

Plate no.	Figure	Description
CXLV	Brahmā	With consorts, Sarasvatī on the right and Śāvitrī on the left, measured in the large ten *tāla*, the consorts being in the middle ten *tāla*; placed on one pedestal in the erect posture, (may also be seated on a lotus throne or be in a recumbent posture); in the equipoise (single flexion, three-flexion or excessive flexion) pose; stationary (or movable) position; made with gold, silver, copper, stone, wood, stucco, grit, glass, or terra-cotta; in high relief, (middle relief or low relief); furnished with four faces, one neck, eight eyes, eight ears, two legs, four arms, the two lower hands being in boon-giving and refuge-offering attitudes, and the two upper hands holding attributes of the water-pot, and the rosary (or two sacrificial ladles); wearing crowns, the matted hair, ear-rings, various ornaments, the sacred thread, outer garment, whitish clothes, a strip of bark, an upper garment and golden complexion.

N.B.—For description of Sarasvatī *see* plate CXLVIII, p. 57, and of Sāvitrī *see* pp. 57-58 above.

CXLVI	Vishṇu	With consorts, Lakshmī and Bhūdevī, alternately on the right and the left, measured in the large ten *tāla*, the consorts being in the middle ten *tāla*, made in the erect, (seated or recumbent) posture, on three lotus seats, in the equipoise (single flexion, three flexion or excessive flexion) pose; stationary (or movable) position; made with gold, silver, copper, stone, wood, stucco, grit, glass, or terra-cotta; in the high relief, (middle relief, or low relief); furnished with a single head, two ears, two legs, but four arms, one hand being in refuge-offering attitude and three others holding attributes of the (lotus), mace, discus and conch-shell; wearing the *kirīṭa* crown, the ornamental nimbus at the back of the head, the Śrīvatsa symbol on the chest, the sacred thread, yellow garment, bright blue complexion, smiling face, straight nose and elongated eyes.

N.B.—For description of Lakshmī, *see* plate CXLIX, pp. 57-58, and of Bhūdevī otherwise called Mahī, p. 59 above.

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Plate no.	Figure	Description
CXLVII	Śiva	With the consort Pārvatī on the left, measured in the large ten *tāla*, the consort being in the middle ten *tāla*, made in erect, (seated or recumbent posture), on two lotus seats, in the equipoise (single flexion, three flexion or excessive flexion) pose; stationary (or movable) position; made with gold, silver, copper, stone, wood, stucco, grit, glass, or terra-cotta; in high relief, (middle relief, or low relief); furnished with a single head but a third eye on the forehead, the left side of the neck being marked with the *kālakūṭa* poison, bearing two ears, two legs, four arms, two hands in the boon-giving and the refuge-offering attitudes, the attributes in the other two hands being an antelope and a tabor, wearing a crown marked with the Ganges and the crescent moon, and the matted hair of an ascetic, the tiger-skin and a waist cloth, the sacred thread, ear-rings and various ornaments and reddish complexion.

N.B.—For description of Pārvatī, otherwise called Durgā, *see* p. 59 above.

CHAPTER LII

THE PHALLUS OR SYMBOL OF THE TRIAD, COMPRISING SEVERAL TYPES

Plate no.	Figure	Description
		Not illustrated
	Liṅga (general)	Brahmā portion at the bottom being of quadrangular shape, Vishṇu portion at the middle of octagonal shape, and the Śiva portion at the top of circular shape, with flutes (or stream-mark) varying from sixteen to one thousand. These shapes are interchangeable, the topmost point being like a bud, leaf or umbrella. It includes the *Pīṭha* (pedestal) upon which it stands. It is carved singly or in group, varying according to castes, materials (gold, silver, copper, stone, wood, stucco, grit, glass, or terra-cotta), and sizes. It is used for personal and public worship.
	First type	Śaiva, with its characteristic features.

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Plate no.	Figure	Description
	Second type	Pāśupata, with its characteristic features.
	Third type	Kālamukha, with its characteristic features.
	Fourth type	Mahāvrata, with its characteristic features.
	Fifth type	Vāma, with its characteristic features.
	Sixth type	Bhairava, with its characteristic features.
	Seventh type	Samakarṇa, with its characteristic features, the worship by the Brahmans.
	Eighth type	Vardhamāna, with its characteristic features, for worship by the Kshatriyas.
	Ninth type	Śivāṅka, with its characteristic features, for worship by the Vaiśyas.
	Tenth type	Svastika, with its cross-like shape and other characteristic features, for worship by the Śūdras.
	Eleventh type	Jāti, with its characteristic height.
	Twelfth type	Chhanda, with its characteristic height.
	Thirteenth type	Vikalpa, with its characteristic height.
	Fourteenth type	Ābhāsa, with its characteristic height.
	Fifteenth type	Nāgara, with its characteristic width and square form.
	Sixteenth type	Drāviḍa, with its characteristic width and octagonal or hexagonal form.
	Seventeenth type	Vesara, with its characteristic width and round form.
	Eighteenth type	Daivika, self-revealed, with its characteristic features, for divine purposes.
	Nineteenth type	Mānusha, self-revealed, with its characteristic features, for human purposes, on the terrace of a mountain.
	Twentieth type	Gāṇava, self-revealed, with its characteristic features, for the Gaṇas.
	Twenty-first type	Ārsha, self-revealed, with its characteristic features, for the seers or sages.
	Twenty-second type	Ātmārtha, with its characteristic features, for personal worship.
	Twenty-third type	Parārtha, with its characteristic features, for public worship.
	Twenty-fourth type	Kshaṇika, with its characteristic features, for temporary worship.

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Plate no.	Figure	Description
	Twenty-fifth type	Sthāyin, with its characteristic features, for permanent use.
	Twenty-sixth type	Ekaliṅga, carved singly and independently, with its characteristic features.
	Twenty-seventh type	Bahu-liṅga, carved in groups, with its characteristic features.

N.B.—There are several other minor varieties.

CHAPTER LIII

ALTARS OR SYMBOLS OF SATĪ (ŚIVA'S CONSORT), COMPRISING EIGHT TYPES AND FIFTY-ONE INDEPENDENT VARIETIES

Not illustrated

Plate no.	Figure	Description
	Pīṭha (general)	Erected both independently of the Liṅga and as a component part thereof and conforming to the shape of the Liṅga, but of a different material; installed both inside and outside the main temple, in the central plot (*Brahma-pīṭha*) of villages and the palaces, on the top of a mountain and the bank of a river, etc., on the fifty-one sacred spots (*Pīṭha-sthāna*), of white colour for the Brahmans, of red colour for the Kshatriyas, of yellow colour for the Vaiśyas, and of black colour for the Śūdras.
	First type	Bhadrapīṭha, with its characteristic features.
	Second type	Śrībhadra, with its characteristic features.
	Third type	Śrīviśāla, with its characteristic features.
	Fourth type	Upapīṭha, with its characteristic features.
	Fifth type	Nāgara, with its characteristic features and quadrangular form.
	Sixth type	Drāviḍa, with its characteristic features and octagonal form.
	Seventh type	Vesara, with its characteristic features and round form.
	Eighth type	Āndhra, with its characteristic features and hexagonal form.

N.B.—There are fifty-one independent varieties with slightly different features, but bearing as many epithets.

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CHAPTER LIV

FEMALE DEITIES, COMPRISING THIRTEEN GODDESSES

Plate no.	Figure	Description
CXLVIII	First type	Sarasvatī, goddess of learning, carved both independently (and as consort of Brahmā), measured in the (middle) ten *tāla*, placed on a lotus pedestal as seated in a *padmāsana* (cross-legged) posture, in the equipoised pose, and in a stationary position; made of gold, silver, copper, stone, wood, stucco, grit, glass, or terra-cotta; furnished with a cheerful face, two eyes, two ears, two legs, four arms, holding the mirror (or lute) in the upper right hand, a book in the upper left hand, the rosary garland in the lower right hand, and a pot in the lower left hand. Her complexion is crystal white (or gold). She wears yellow clothes and a knotted garment, jewel scarf, etc. She puts on the *keśa-bandha*, *karanda* or *kuntala* crown together with the crest jewel, a bee mark on pearl fillet on the forehead, crocodile shaped rings, flowers and pearl garlands on the ears, a chain and pearl strings over the neck and shoulders, breast-bands or brassier round the breasts and garlands for the arms, the *keyura* and *kataka* armlets, bracelets or bangles on the wrists, pearl bands on the root of the arms, rings of precious stones on all fingers except the middle one, serpent-shaped net ornaments on the legs, anklets, jewel rings on the toes, and all other ornaments. There is a second variety of Sarasvatī with two arms, the right hand being in boon-giving attitude, and the left holding a lotus; seated or erect on the right of Brahmā, with same complexion but slightly different ornaments.
CXLIX	Third type	Lakshmī, goddess of prosperity, of two types, great and ordinary, carved both independently and as a consort of Vishṇu, measured in the (middle) ten *tāla*, placed on a red lotus as seated in a *padmāsana* (cross-legged) posture, in the equipoised pose and in a stationary position; made

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Plate no.	Figure	Description
		of gold, silver, copper, stone, wood, stucco, grit, glass, or terra-cotta; furnished with plump and full breasts, a cheerful face with large and broad eyes smiling, having two ears, two legs, four arms, the upper right hand being in the refuge-offering attitude, the upper left hand holding a small drum, the lower right hand holding a lotus (or rosary garland), and the lower left hand holding a blue or red lotus. She bears a pure gold complexion and is clad in yellow clothes or a red garment, jewel *chhannavīra* jacket and gold or jewel scarf. She puts on the *kuntala* type of crown and there is a (bee-mark or) jewel fillet on the forehead. She is adorned with gold rings or crocodile rings with gold strings or garlands on the ears, a pretty chain and strings over the neck, jewels or gold fillets on the nipples and around the breasts, gold *keyura*, and *kaṭaka* upper armlets, jewel bracelets on the wrists and bangles on the wrist-joints, jewel strings round the buttock and jewel garlands, etc., three pendants adorned with all gems, serpent-shaped bracelets with jewel bands and anklets on the feet, and jewel rings on the toes, and all other ornaments.
		There is an ordinary type, furnished with two arms, two eyes, two elephants on the two sides and slightly different ornaments.
		There is a third type, placed on the right side of Vishṇu, in an erect or sitting posture, furnished with two eyes and two arms holding a lotus with the uplifted hand and the right hand being in the boon-giving posture or hanging downwards, and furnished with slightly different ornaments.
		Not illustrated
	Second type	Śāvitri, carved both independently and as a consort of Brahmā, measured in the middle ten *tāla*, placed on a lotus pedestal in an erect or sitting posture, in one of the four poses, in stationary or movable position; made of one of the nine materials; furnished with white, red, or

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Plate no.	Figure	Description
		bright blue complexion, two eyes, two arms, a peaceful face, a silk garment or yellow clothes, with a characteristic crown and various ornaments.
	Fourth type	Mahī or Bhūdevi, earth-goddess (mother country), carved both independently and as a consort of Vishṇu, measured in the middle ten *tāla*, placed on a seat, in an erect or sitting posture, in one of the four poses, in stationary or movable position; made of one of the nine materials; furnished with bright blue complexion, two arms, two eyes, a peaceful motherly face, fine silk clothes, with a characteristic crown, lotus attribute, and various ornaments.
	Fifth type	Durgā or Pārvatī, the Maid of Mountain, carved both independently and as a consort of Śiva or Phallus, measured in the middle ten *tāla*, placed on a seat, in an erect or sitting posture, in one of the four poses, in the attitude of a milk-maid, in stationary (or movable) position; made of one of the nine materials; furnished with light blue complexion, fine silk clothes or yellow garment, lotus attribute, long arms, large eyes, plump breasts with high slope, broad belly, well marked buttock, large hip and thighs, broad smiling face, high neck prominent mouth, characteristic crown and various ornaments. There are two other varieties: Gaurī or the White, and Pārvatī or the Maid of Mountain with slightly different features and ornaments.
	Sixth type	Mana-unmādinī (enchantress of the mind) or Ratī, goddess of love, measured in the middle ten *tāla*, generally placed in Śiva temple, in an erect posture and characteristic pose, or seated on a bull, made with one of the nine materials; furnished with three eyes, four arms, water-lily and rosary attributes, reddish-white or bright blue complexion, fine silk clothes, characteristic crown and various ornaments, carved, when independent, with a young hare and a horse on the two sides.

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Plate no.	Figure	Description
	Seventh type	Vārāhī, measured in the nine *tāla*, placed on the Bhadra pedestal, in a suitable posture, pose and position; made of one of the nine materials; furnished with four arms bearing the plough and other attributes, hog's face with snout, bright blue complexion, characteristic crown and various ornaments.
	Eighth type	Kaumārī, measured in the nine *tāla*, placed on the Bhadra pedestal, in a suitable posture, pose and position; made of one of the nine materials; furnished with four arms, three eyes, the *karaṇḍa* crown, red complexion, bright blue clothes, characteristic attributes and various ornaments.
	Ninth type	Chāmuṇḍī, measured in the nine *tāla*, placed on the Bhadra pedestal, in a suitable posture, pose and position; made of one of the nine materials; furnished with three eyes, four arms, the *jaṭā* crown, arrow attribute, dark-bluish complexion, garland on the head, conch leaf and rings on the ears, and various other ornaments.
	Tenth type	Bhairavī, measured in the nine *tāla*, placed on the Bhadra pedestal, in a suitable posture, pose and position; made of one of the nine materials; furnished with three eyes, four arms, arrow attribute, red complexion, black clothes, characteristic crown, attributes, and various ornaments.
		There is a second type, Rudrāṇī, with slightly different features and ornaments.
	Eleventh type	Māhendrī, measured in the nine *tāla*, placed on the Bhadra pedestal in a suitable posture, pose and position; made of one of the nine materials; furnished with three eyes, four arms, bearing characteristic attributes, crown, complexion, clothes, and various ornaments.
	Twelfth type	Vaishṇavī, measured in the nine *tāla*, placed on the Bhadra pedestal, in a suitable posture, pose and position; made of one of the nine materials; furnished with four arms, three eyes, bright blue complexion, yellow clothes, characteristic attributes, crown, and various ornaments.

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Plate no.	Figure	Description
	Thirteenth type	Brahmāṇī, measured in the nine *tāla*, placed on the Bhadra pedestal, in a suitable posture, pose and position; made of one of the nine materials; furnished with four arms, three eyes, four faces, the *jaṭā* crown, pot and rosary attributes, white complexion, red clothes, and various ornaments.

N.B.—There are references to other minor varieties of female deities also.

CHAPTER LV

JAIN IMAGES, COMPRISING FIVE GROUPS AND TWENTY-FOUR TĪRTHAṄKARAS

Plate no.	Figure	Description
CL	Third group	Jina, measured in the large ten *tāla*, in a straight, erect or sitting posture, in the equipoised pose, stationary (or movable) position; made with gold, silver, copper, stone, wood, stucco, grit, glass, or terra-cotta; in high relief; furnished with two arms and two eyes; the head being clean-shaven but furnished with the top knot (nimbus): the legs uniformly straight, two long hands, suspending, two feet on the lotus throne with a pinnacle, the crocodile arch, ornamental tree, royal elephants, etc., in a straight pose; the whole body being in a stiff attitude; bearing a meditative look on the supreme soul; placed below the fourth or third heaven; wearing no robes or ornaments; marked with the *śrīvatsa* symbol in gold on the chest; crystal complexion; accompanied by sages, demigods and goddesses in a praying mood: Nārada with his musical instrument, Yaksha and Yakshesvara on the sides with raised chowries, Vidyādharas and minor kings.
		There is a sitting variety, placed on the lotus seat, with two hands placed upwards over the face.
		Not illustrated
	First group	Siddhas, measured in the large ten *tāla*, in an erect or sitting posture, in equipoised pose,

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Plate no.	Figure	Description
		stationary or movable position; in high, middle or low relief; made of one of the nine materials, and with characteristic features slightly different from those of the Jinas.
	Second group	Sugandhas, measured in the large ten *tāla*, in an erect or sitting posture, in equipoised pose, in stationary or movable position; in high, middle or low relief; made of one of the nine materials, and with characteristic features slightly different from those of the Jinas.
	Fourth group	Arhatas, measured in the large ten *tāla*, in an erect or sitting posture, in equipoised pose, in stationary or movable position; in high, middle or low relief; made of one of the nine materials, and with characteristic features slightly different from those of the Jinas.
	Fifth group	Pārśvakas, measured in the large ten *tāla*, in an erect or sitting posture, in equipoised pose, stationary or movable position; in high, middle or low relief; made of one of the nine materials, and with characteristic features slightly different from those of the Jinas.
	Tīrthaṅkaras	Comprising twenty-four types, also measured in the large ten *tāla*, carved in an erect or sitting posture; in suitable pose and position, with one of the nine materials, generally in high relief, with slightly different characteristic features:
	First type	Ādinātha, with his distinctive sign of the bull.
	Second type	Ajitanātha, with his distinctive sign of the elephant.
	Third type	Śambhunātha, with his distinctive sign of the horse.
	Fourth type	Abhayānandanātha, with his distinctive sign of the monkey.
	Fifth type	Sumatinātha, with his distinctive sign of the red goose.

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Plate no.	Figure	Description
	Sixth type	Supadmanātha, with his distinctive sign of the lotus.
	Seventh type	Supārśvanātha, with his distinctive sign of the Svastika.
	Eighth type	Chandraprabha, with his distinctive sign of the crescent moon.
	Ninth type	Pushpadanta, with his distinctive sign of the crocodile.
	Tenth type	Śītalanātha, with his distinctive sign of the tree or flower.
	Eleventh type	Aṁśanātha, with his distinctive sign of the rhinoceros.
	Twelfth type	Vasupadya, with his distinctive sign of the buffalo.
	Thirteenth type	Vimalanātha, with his distinctive sign of the boar.
	Fourteenth type	Anantanātha, with his distinctive sign of the porcupine.
	Fifteenth type	Dharmanātha, with his distinctive sign of the thunderbolt.
	Sixteenth type	Śāntanātha, with his distinctive sign of the antelope.
	Seventeenth type	Kunthanātha, with his distinctive sign of the goat.
	Eighteenth type	Aranātha, with his distinctive sign of the fish.
	Nineteenth type	Mallinātha, with his distinctive sign of the pinnacle.
	Twentieth type	Munisuvrata, with his distinctive sign of the tortoise.
	Twenty-first type	Naminātha, with his distinctive sign of the lotus with stalk.
	Twenty-second type	Nemināta, with his distinctive sign of the shell.
	Twenty-third type	Pārśvanātha, with his distinctive sign of the snake.
	Twenty-fourth type	Vardhamāna or Māhāvira, with his distinctive sign of the lion.

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CHAPTER LVI

BUDDHIST IMAGES, COMPRISING SEVERAL TYPES

Plate no.	Figure	Description
CLI	Buddha	Measured in the large ten *tāla*, made of wood, stone, or metallic substances (gold, silver, or copper), in sitting (or erect) posture, equipoised pose, stationary (or movable) position; in high, (middle, or low relief, or on a tablet or wall) with terra-cotta or grit; placed on a throne decorated with arches, holy fig tree and ornamental tree; furnished with a full face, long nose, smiling eyes, elongated ears, fleshy body, broad chest, round belly, long arms, white complexion, yellow clothes, the *ushṇīsha* (protuberance of the skull), and carved in a praying attitude.
		There are other types, generally in an erect posture and with slightly different characteristic features.

CHAPTER LVII

SAGES, COMPRISING SEVEN GREAT PATRIARCHS

Plate no.	Figure	Description
CLII	Second type	Kāśyapa, measured in the eight *tāla*, carved in an erect (or sitting) posture, in stationary (or movable) position; in high relief; made with gold, silver, copper, wood, stone, stucco, grit, glass, or terra-cotta; furnished with yellow complexion, yellow clothes, two arms, two eyes, matted hair, sacred thread, upper garment, holding a book in the left hand and a staff in the right.
		Not illustrated
	First type	Agastya, measured in the seven *tāla*, carved in erect or sitting posture, in a praying attitude, and stationary or movable position; in high, middle, or low relief; made with one of the nine materials; furnished with bright-green complexion, yellow garments, two arms, two eyes, large belly, brownish complexion, full and crooked form, *jaṭā* and *juṭa* matted hair, sacred thread and upper garment, holding a book in one hand and a staff in the other.

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Plate no.	Figure	Description
	Third type	Bhṛigu, measured in the eight *tāla*, carved in an erect or sitting posture, in a praying attitude, and stationary or movable position; in high, middle, or low relief; made with one of the nine materials; furnished with dark complexion, yellow clothes, two arms, two eyes, matted hair, sacred thread, upper garment, and holding a book in one hand and a staff in the other.
	Fourth type	Vaśishṭha, measured in the nine *tāla*, carved in an erect or sitting posture, in a praying attitude, in stationary or movable position; in high, middle, or low relief; made with one of the nine materials; furnished with red complexion, yellow clothes, matted hair, sacred thread, upper garment, holding a book in one hand and a staff in the other.
	Fifth type	Bhārgava, measured in the nine *tāla*, carved in an erect or sitting posture, in a praying attitude, and stationary or movable position; in high, middle, or low relief; made with one of the nine materials; furnished with brownish (tawny) complexion, yellow clothes, two arms, two eyes, matted hair, sacred thread, upper garment, holding a book in one hand and a staff in the other.
	Sixth type	Viśvāmitra, measured in the nine *tāla*, carved in an erect or sitting posture, in a praying attitude, and stationary or movable position; in high, middle, or low relief; made of one of the nine materials; furnished with reddish complexion, yellow clothes, matted hair, sacred thread, upper garment, two eyes, two arms, holding a book in one hand and a staff in the other.
	Seventh type	Bharadvāja, measured in the nine *tāla*, carved in an erect or sitting posture, in a praying attitude, and stationary or movable position; in high, middle, or low relief; made of one of the nine materials; furnished with greenish (turmeric) complexion, yellow clothes, matted hair, sacred thread, upper garment, two eyes, two arms, holding a book in one hand and a staff in the other.

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CHAPTER LVIII

MYTHICAL BEINGS, COMPRISING SIX TYPES

Plate no.	Figure	Description
CLIII	Second type	Vidyādhara, chowry-bearer of the gods and a kind of fairy possessed of magical powers; measured in the nine *tāla*; made of one of the nine materials; furnished with two arms, two eyes, the *karaṇḍa* crown, demon shape, dark-red and yellow complexion, hands kept touching the knees, and raised towards the gateway, plough-shaped legs turned backwards, the right leg being in the *svastika* pose and the left bent (alternately), one hand holding up chowries and the other kept touching the ground; carved in a sitting posture and figured on arches, palaces and storeyed buildings.
		Not illustrated
	First type	Yaksha, attendant to the gods, Jain deities, bearer of chowries, measured in the nine *tāla*; made of one of the nine materials; furnished with two arms, two eyes, the *karaṇḍa* crown, legs clad in clothes, demon shape, bright-blue and yellow complexion, plough-shaped legs turned towards the back, the right leg being in the *svastika* pose and the left bent, hands kept touching the knees and raised towards the gateway, one hand holding up chowries and the other kept touching the ground; carved on arches thrones, palaces and storeyed buildings.
	Third type	Rākshasa, evil spirit of an offensive disposition, carved with characteristic features, measure, materials, look, etc.
	Fourth type	Nigraha, supernatural being of a benevolent disposition, carved with characteristic features, measure, materials, look, etc.
	Fifth type	Gandharva, celestial choir and musician, carved with suitable measure and materials; furnished with red complexion, two arms, two eyes, demon shape, singing or dancing pose, holding a lute and other musical instruments, and decorated with various ornaments.

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Plate no.	Figure	Description
	Sixth type	Kinnara, a kind of hybrid being : legs being like those of an animal (horse), upper body like that of a man, face like of Garuda, and arms being provided with wings, holding a lute, possessing the beautiful hue of a flower, wearing the lotus crown, measured in the nine *tāla* ; made of one of the nine materials ; furnished with various ornaments ; figured on arches, chariots, etc.

CHAPTER LIX

DEVOTEES, COMPRISING FOUR CLASSES

Plate no.	Figure	Description
CLIV	Fourth type	Sāyujya class, in intimate union with the god, measured in the large ten *tāla*, in an erect posture, and praying attitude ; furnished with characteristic features and ornaments ; figured on storeyed buildings.
		Not illustrated
	First type	Sālokya class, dwelling in the same place as the god, measured in the large nine *tāla* ; furnished with characteristic features and ornaments ; figured on storeyed buildings.
	Second type	Sāmīpya class, dwelling in the vicinity of the god, measured in the small ten *tāla* ; furnished with characteristic features and ornaments ; figured on storeyed buildings.
	Third type	Sārūpya class, in close identity with the god, measured in the middle ten *tāla* ; furnished with characteristic features and ornaments ; figured on storeyed buildings.

CHAPTER LX

THE GOOSE, VEHICLE OF BRAHMĀ

Not illustrated

Plate no.	Figure	Description
	Goose	Riding animal of Brahmā, measured in the two *tāla* ; furnished with plough-shaped wing-joint, circular thigh-root, white complexion

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Plate no.	Figure	Description
		all over the limbs, legs being reddish-white, beak goldish, variegated feathers, crest and tail; carved in rows in all buildings, foot-mark on the dome, figured on the entablature, architrave, finial, recess, and neck of various buildings.

CHAPTER LXI

GARUḌA, VEHICLE OF VISHṆU

Plate no.	Figure	Description
CLV	Garuḍa	Mythical being, riding animal of Vishṇu, measured in the nine *tāla*, carved in a sitting (erect or walking) posture, in stationary (or movable) position; furnished with the lion-feet, face smiling at end of the eyes, mind expressed on the face, two arms, two wings, alternately parrot beak and goose foot, face with fangs, bird-wings, eight-hooded snake, terrific look, various ornaments including the *karaṇḍa* crown, five colours (yellow, white, dark-blue, red and black); bright green from hair to ear, blue edge, five-coloured wings with spotted bodice, yellow from the heart (part) to the hips and hands, red knee, whitish feet, alternately bent face, hands and legs, body gold; alternately five-coloured lion-head, red pointed tail; made of stone, earth, wood, planked grit, etc.; carved in a sitting (or erect) posture, alternately with joined palms meditating on Vishṇu; installed in and at the gate of Vishṇu temple; figured in storeyed buildings.

CHAPTER LXII

THE BULL, VEHICLE OF ŚIVA AND LOVE-GODDESS

Not illustrated

Plate no.	Figure	Description
	Bull	Riding animal of Śiva and Love-goddess, carved in various (*tāla*) measures, in recumbent or erect posture, and walking pose, installed on a pedestal facing the Śiva temple both inside the shrine and in a

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Plate no.	Figure	Description
		pavilion in front of the temple, or at the door; white all over, the four legs, hoofs and two ears being red; wearing a tiger-skin, garlands at the neck and foot-rings or anklets; made solid or hollow, of gold, silver, copper, stone, wood, glass, stucco, earth and planked grit or baked clay; furnished with various other ornaments; figured on the entablature, etc.

CHAPTER LXIII

THE LION, VEHICLE OF PĀRVATĪ

Not illustrated

Plate no	Figure	Description
	Lion	Riding animal of Pārvatī and others, carved in suitable measure, the tail being generally equal to the height; in erect, sitting, or recumbent posture, the four legs being like those of the tiger; furnished with white complexion, with red mane, crescent-shaped nails and teeth; figured on arches, thrones, pillars, etc.

CHAPTER LXV

TĀLAS, COMPRISING TWELVE TYPES

Plate no.	Figure	Description
CLVI	First type	Large ten *tāla*, in which measures of one hundred and fifty-four parts (limbs) of the body is given. It is used in measuring superhuman deities, including Buddha, Jina, etc.
	Second type	Nine *tāla*, used in measuring goddesses, sages, demons, etc.
	Third type	Eight *tāla*, used in measuring sages, devotees ordinary human beings, etc.
	Fourth type	Seven *tāla*, used in measuring sages, demigods, females, etc.
	Fifth type	Six *tāla*, used in measuring the tiger, etc.

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Plate no.	Figure	Description
	Sixth type	Five *tāla*, used in measuring Gaṇeśa with elephant's head and human body.
	Seventh type	Four *tāla*, used in measuring goblins, etc.
	Eighth type	Three *tāla*, used in measuring Kinnara with horse's head and human body, etc.
	Ninth type	Two *tāla*, used in measuring birds.
	Tenth type	One *tāla*, used in measuring Vandukas, Kabandhas (headless body), etc.
		Not illustrated
	Eleventh type	Eleven *tāla*, used in measuring certain gods
	Twelfth type	Twelve *tāla*, used in measuring Rākshasas etc.

N.B.—Each of the *tāla* system admits of three varieties, large, middle, and small; ordinarily in the ten *tāla*, the whole height of an image is ten times its face, in nine *tāla* it is nine times, in eight *tāla* it is eight times, and so forth.

CHAPTER LXVII

PLUMB LINES, ELEVEN IN NUMBER

Plate no.	Figure	Description
CLVII	First type	Plumb-lines shown on the front of the image.
	Second type	Plumb-lines shown on the side of the image.

N.B.—There are eleven lines drawn through the body of an image in order to find out accurately the perpendicular and the horizontal measurement of, and the distance between different parts of the body, varying in accordance with the three postures (erect, seated, and recumbent) and the four poses (equipoise, slight flexion, three flexions, and excessive flexions).

ALLAHABAD UNIVERSITY,
February 6, 1933.

P. K. ACHARYA.

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विभाग

काइल की संख्या

नया संख्या

भाइल का

विभाग	संख्या	

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